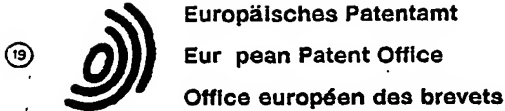


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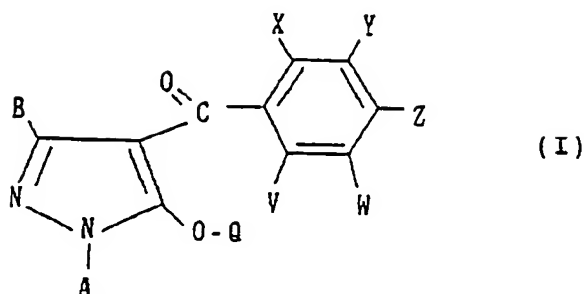
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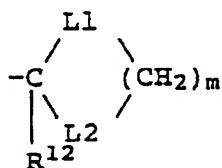
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㉜ Pyrazole derivatives and herbicides containing them.

㉝ A pyrazole derivative of the formula I



wherein A is C₁-C₄ alkyl, C₂-C₄ alkenyl or C₂-C₄ alkynyl; B is hydrogen, C₁-C₃ alkyl, halogen, C₁-C₃ haloalkyl, C₁-C₃ alkoxy, C₁-C₃ alkylthio, C₂-C₄ alkoxyalkyl, C₂-C₄ alkylthioalkyl or C₂-C₄ alkoxycarbonyl; X is C₁-C₆ alkyl, C₁-C₆ alkoxy, halogen, nitro, cyano, etc.; Y is -OR¹ (wherein R¹ is C₃-C₈ cycloalkyl, etc.), -O-L-O-R¹ (wherein L is C₁-C₆ alkylene which may be substituted by C₁-C₃ alkyl), -O-L-OH, -O-L-O-L-O-R² (wherein R² is hydrogen, C₁-C₆ alkyl group, etc.), -O-L-R³ (wherein R³ is phenyl which may be substituted by C₁-C₃ alkyl, etc.), -O-M (wherein M is a 3- to 6-membered alicyclic group), -O-L-M, -O-L-NR⁴R⁵ - (wherein each of R⁴ and R⁵ is hydrogen or C₁-C₆ alkyl, or R⁴ and R⁵ form a ring together with the adjacent nitrogen atom), -O-L-COOR⁴, -O-CH=CH-COOR⁴, -O-L-CN, -O-L-C(O)-R², -O-L-S(O)_n-R⁴ (wherein n is an integer of from 0 to 2), -O-COOR⁴, -O-CONR⁴R⁵, -OP(O)(OR⁴)₂, -S(O)_nR¹, or -S(O)_n-L-O-R¹; Z is halogen, nitro, C₁-C₃ alkoxy, etc.; V is hydrogen, halogen, C₁-C₄ alkyl or C₁-C₄ alkoxy; W is hydrogen, halogen, C₁-C₄ alkyl, etc.; Q is hydrogen, C₁-C₆ alkyl which may be substituted by halogen, ... -C(O)-R⁷ (wherein R⁷ is phenyl which may be substituted), -S(O)₂R⁷, -P(O)(OR⁷)₂, -L-C(O)-R⁷, -L-C(O)-N(R⁸)(R⁹) (wherein each of R⁸ and R⁹ is hydrogen or C₁-C₆ alkyl), -L-R¹⁰ (wherein R¹⁰ is phenyl group may be substituted, C₁-C₆ alkyl, C₁-C₆ alkoxy, or hydroxyl), -L-N(R⁸)(R⁹), -L-OR¹¹ (wherein R¹¹ is hydrogen, C₁-C₆ alkyl, or C₁-C₆ alkenyl), -L-OC(O)R¹² (wherein R¹² is C₁-C₆ alkyl or C₁-C₆ alkoxy), -L-S(O)_nR¹¹, -L-SC(O)R⁸.



(wherein each of L1 and L2 is methylene, oxygen or sulfur, R¹² is hydrogen or C₁-C₃ alkyl, and m is 2 or 3); and a salt thereof.

PYRAZOLE DERIVATIVES AND HERBICIDES CONTAINING THEM

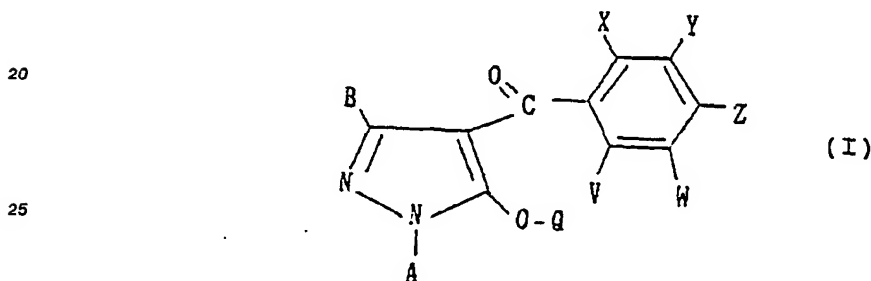
The present invention relates to novel 4-benzoylpyrazole derivatives and selective herbicides containing such derivatives as active ingredients, which are useful particularly as upland field herbicides.

Various herbicides have been developed for practical use from extensive research and development of herbicides for many years, and such herbicides have contributed to a reduction of the labor force required for controlling weeds or to improvement of the productivity of agricultural or horticultural plants.

Even now, it is still desired to develop a new herbicide having superior herbicidal properties. In particular, it is desired to develop an agricultural or horticultural herbicide which is capable of selectively controlling weeds without adversely affecting the crop plant and at a low dose. However, conventional herbicides do not necessarily provide such desired herbicidal properties.

On the other hand, certain compounds of 4-benzoylpyrazole derivatives are known to have herbicidal activities. For example, pyrazolate (common name) and pyrazoxyfen (common name) are practically used as herbicides for paddy fields. While exhibiting excellent herbicidal activities as paddy field herbicides, these compounds are not suitable as upland herbicides since their herbicidal activities are weak against weeds of upland fields. Among 4-benzoylpyrazole derivatives, it is desired to develop a superior compound useful as an upland field herbicide.

The present invention provides a pyrazole derivative having the formula:



wherein A is a C₁-C₄ alkyl group, a C₂-C₄ alkenyl group or a C₂-C₄ alkynyl group;

B is a hydrogen atom, a C₁-C₃ alkyl group, a halogen atom, a C₁-C₃ haloalkyl group, a C₁-C₃ alkoxy group, a C₁-C₃ alkylthio group, a C₂-C₄ alkoxyalkyl group, a C₂-C₄ alkylthioalkyl group or a C₂-C₄ alkoxycarbonyl group;

X is a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆ haloalkyl group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkylcarbonyl group, a C₂-C₆ alkoxycarbonyl group, an aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆ alkyl group, a C₁-C₆ haloalkoxy group, a C₁-C₆ alkylthio group or a C₂-C₆ alkylthioalkyl group;

Y is -OR¹ (wherein R¹ is a C₃-C₈ cycloalkyl group, a C₄-C₈ cycloalkylalkyl group, a C₃-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₃-C₈ halocycloalkylalkyl group, a C₃-C₆ haloalkenyl group, a C₂-C₆ haloalkynyl group, a C₂-C₆ nitroalkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-O-R¹ (wherein L is a C₁-C₆ alkylene group which may be substituted by a C₁-C₃ alkyl group, and R¹ is as defined above), -O-L-OH (wherein L is as defined above), -O-L-O-L-O-R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆ alkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-R³ (wherein L is as defined above, and R³ is a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), -O-L-M (wherein L and M are as defined above), -O-L-NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and R⁵ form a ring together with the adjacent nitrogen atom), -O-L-COOR⁴ (wherein L and R⁴ are as defined above), -O-CH=CH-COOR⁴ (wherein R⁴ is as defined above), -O-L-CN (wherein L is as defined above), -O-L-C(O)-R² (wherein L and R² are as defined above),

-O-L-S(O)_n-R⁴ (wherein L and R⁴ are as defined above, and n is an integer of from 0 to 2), -O-COOR⁴ - (wherein R⁴ are as defined above), -O-CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above), -OP(O)(OR⁴)₂ -

(wherein R^4 is as defined above), $-S(O)_nR^1$ (wherein R^1 and n are as defined above), or $-S(O)_n-L-O-R^1$ (wherein L , R^1 and n are as defined above);

Z is a halogen atom, a nitro group, a C_1-C_3 alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or $-S(O)_nR^5$ (wherein n is as defined above, and R^5 is a C_1-C_3 alkyl group or a C_1-C_3 haloalkyl group);

V is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group or a C_1-C_4 alkoxy group;

W is a hydrogen atom, a halogen atom, a C_1-C_4 alkyl group, a C_1-C_4 haloalkyl group, a C_1-C_4 alkoxy group, a C_2-C_6 alkoxyalkyl group, a C_2-C_5 alkoxycarbonyl group, a C_1-C_3 haloalkoxy group, a nitro group, a cyano group or $-S(O)_nR^5$ (wherein n and R^5 are as defined above); and

Q is a hydrogen atom, a C_1-C_6 alkyl group which may be substituted by a halogen atom, a C_1-C_6 alkenyl group which may be substituted by a halogen atom, a C_1-C_6 alkynyl group which may be substituted by a halogen atom, a cyanomethyl group, $-C(O)-R^7$ (wherein R^7 is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a C_1-C_6 alkyl group, a C_1-C_6 alkenyl group, a C_1-C_6 alkynyl group, a C_1-C_6 haloalkyl group, a C_1-C_6 haloalkenyl group, a

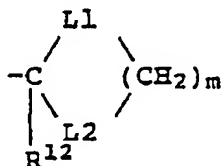
C_1-C_6 haloalkynyl group, a halogen atom, a nitro group and a trifluoromethyl group, a C_1-C_6 alkyl group, a C_1-C_6 alkoxy group, or a hydroxyl group), $-S(O)_2R^7$ (wherein R^7 is as defined above), $-P(O)(OR^7)_2$ (wherein R^7 is as defined above), $-L-C(O)-R^7$ (wherein L and R^7 are as defined above), $-L-C(O)-N(R^8)(R^9)$ (wherein L is as defined above, and each of R^8 and R^9 which may be the same or different is a hydrogen atom or a C_1-C_6 alkyl group),

$-L-R^{10}$ (wherein L is as defined above, and R^{10} is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a halogen atom, a nitro group and a trifluoromethyl group, a C_1-C_6 alkyl group, a C_1-C_6 alkoxy group, or a hydroxyl group), $-L-N(R^8)(R^9)$ (wherein L , R^8 and R^9 are as defined above), $-L-OR^{11}$ (wherein L is as defined above, and R^{11} is a hydrogen atom, a C_1-C_6 alkyl group, or a C_1-C_6 alkenyl group), $-L-OC(O)R^{12}$ (wherein L is as defined above, and R^{12} is a C_1-C_6 alkyl group or a C_1-C_6 alkoxy group),

$-L-S(O)_nR^{11}$ (wherein L , n and R^{11} are as defined above),

$-L-SC(O)R^8$ (wherein L and R^8 are as defined above),

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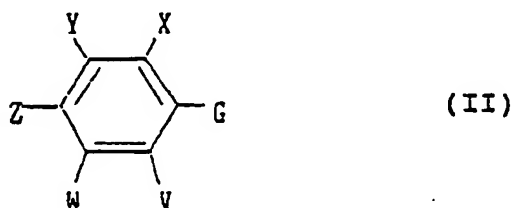
(wherein each of $L1$ and $L2$ which may be the same or different is a methylene group, an oxygen atom or a sulfur atom, R^{12} is a hydrogen atom or a C_1-C_3 alkyl group, and m is 2 or 3); and a salt thereof.

The present invention also provides a selective herbicidal composition comprising a herbicidally effective amount of at least one pyrazole derivative of the formula I as defined above or its salt and an agricultural carrier or diluent.

Further, the present invention provides a method for selectively controlling weeds, which comprises applying the pyrazole derivative of the formula I as defined above or its salt to the locus to be protected.

Furthermore, the present invention provides a substituted benzene derivative of the formula:

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wherein G is a carboxyl group, a halocarbonyl group or a cyanocarbonyl group, and X , Y , Z , V and W are as defined above.

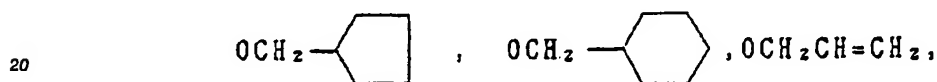
Now, the present invention will be described in detail with reference to the preferred embodiments.

In the compound of the formula I of the present invention, A, B, X, Y, Z and Q are preferably selected from the following substituents, respectively:

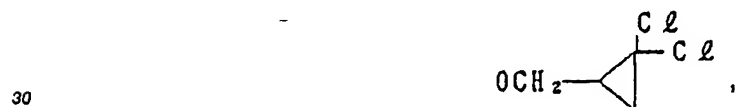
A : Me, Et, n-Pr, i-Pr, CH₂CH=CH₂, CH₂C≡CH, t-Bu

B : H, Me, Et, n-Pr, i-Pr, Cl, Br, CH₂Cl, CF₃, OMe, OEt, OPr-i, SMe, CH₂OMe, CH₂SMe, CO₂Me, CO₂Et

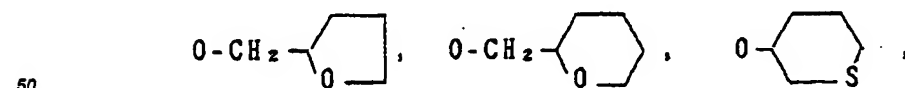
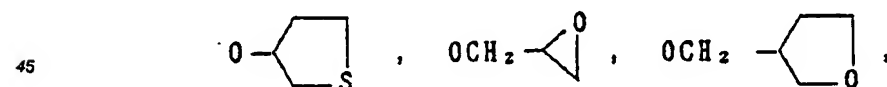
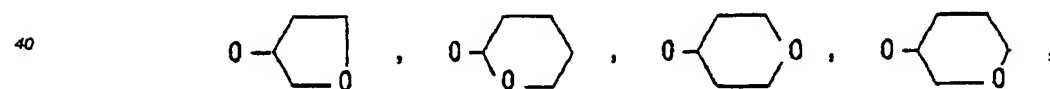
5 X : Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, OMe, OEt, OPr-n, OPr-i, OBu-n, OBu-i, OBu-s, OBu-t, F, Cl, Br, I, NO₂, CN, CH₂F, CHF₂, CF₃, CH₂CF₃, CH₂Cl, CCl₃, CHClMe, CH₂CH₂Cl, CHClCH₂Cl, CH₂Br, CHBrMe, CH₂CH₂Br, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBu-n, CH₂OBu-i, CH₂OBu-s, CH₂OBu-t, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBu-m, CHMeOBu-l, CHMeOBu-s, CHMeOBu-t, CH₂CH₂OMe, CH₂CH₂OEt, CH₂CH₂OPr-i, Ac, COEt, COPr-n, COPr-l, COOMe, COOEt, COOPr-i, CONHMe, 10 CONHEt, CONMe₂, CONEt₂, CONEtMe, OCHF₂, OCF₃, OCH₂CF₃, SMe, SEt, CH₂SMe, CH₂SEt, CHMeSMe, CHMeSEt



OCHMeCH=CH₂, OCM₂CH=CH₂, OCH₂CMe=CH₂, OCH₂CH=CHMe, OCH₂CH=CM₂, OCH₂C≡CH, OCHMeC≡CH, OCM₂C≡CH, OCH₂C≡CMe, OCH₂CH₂F, OCH₂CHF₂, OCH₂CF₃, OCH₂CH₂Cl, OCH- 25 MeCH₂Cl, OCH₂CCl₃, OCH₂CH₂CH₂Cl, OCH₂CH₂Br,



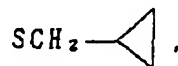
OCH₂CCl=CH₂, OCH₂CH₂CH=CH₂, OCH₂CCl=CHCl, OCH₂CH₂NO₂, OPh, OPh-Me-2, OPh-Cl-4, OPh-NO₂-4, OCH₂CH₂OMe, OCH₂CH₂OEt, OCH₂CH₂OPr-n, OCH₂CH₂OPr-i, OCH₂CH₂OBu-n, 35 OCH₂CH₂OBu-i, OCH₂CH₂Bu-s, OCH₂CH₂OBu-t, OCHMeCH₂OMe, OCH₂CH₂OPh, OCH₂CH₂OCH₂CH₂OMe, OCH₂CH₂OH, OCH₂CH₂OCHMeCH₂OMe, OCH₂Ph, OCHMePh, OCH₂Ph-4-Me, OCH₂Ph-4-Cl, OCH₂CH₂Ph,



OCH₂CH₂NH₂, OCH₂CH₂NHMe, OCH₂CH₂NMe₂, OCH₂CH₂NEt₂,

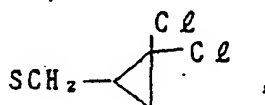


OCH₂COOMe, OCH₂COOEt, OCH₂COOPr-n, OCH₂COOPr-i, OCH₂COOBu-t, OCHMeCOOMe, OCHMeCOOEt, OCHMeCOOPr-n, OCHMeCOOPr-i, OCHMeCOOBu-t, OCH₂CH₂CN, OCH₂CN, OCHMeCN, OCH₂SMe, OCH₂C(O)Ph, OCH₂C(O)Me, OCH₂CH₂SMe, OCH₂CH₂SOMe, OCH₂CH₂SO₂Me, OCH₂CH₂SEt, OCH₂CH₂SO₂Et, OCOOMe, OCOOEt, OCOOPr-l, OCONH₂, OCONHMe, OCONMe₂, OP(O)(OMe)₂, OP(O)(OEt)₂.



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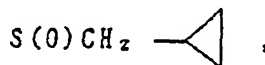
SCH₂CH=CH₂, SCH₂C≡CH, SCH₂CF₃, SCH₂CH₂Cl, SCH₂CCl₃,



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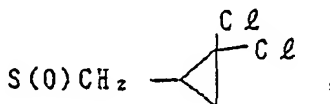
SPh, SCH₂CH₂OMe, SCH₂CH₂OEt, SCH₂CH₂OPr-i, SCH₂CH₂OPh,

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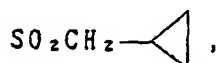
S(O)CH₂CH=CH₂, S(O)CH₂CH≡CH, S(O)CH₂CF₃, S(O)CH₂CH₂Cl,



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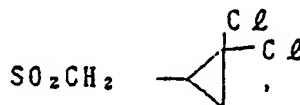
S(O)Ph, S(O)CH₂CH₂OMe, S(O)CH₂CH₂OEt, S(O)CH₂CH₂OPr-i, S(O)CH₂CH₂OPh,

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SO₂CH₂CH=CH₂, SO₂CH₂C≡CH, SO₂CH₂CF₃, SO₂CH₂CH₂Cl,



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SO₂Ph, SO₂CH₂CH₂OMe, SO₂CH₂CH₂OEt, SO₂CH₂CH₂OPr-i,

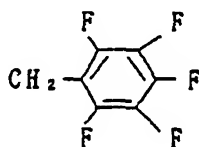
Z: F, Cl, Br, I, NO₂, OMe, OEt, OPr-n, OPr-i, CF₃, CN, SMe, SOMe, SO₂Me, SCF₃, SOCF₃, SO₂CF₃

Q: H, Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, CH₂CH₂Cl, CH₂CF₃, CHClMe, CH₂CH₂Br, CHClCH₂Cl,

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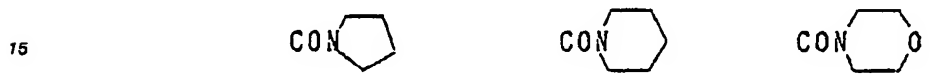
CH₂CH=CH₂, CH₂CMe=CH₂, CH₂CH=CHMe, CH₂C≡CH, CH₂CCl=CH₂, CH₂CN, CH₂Ph, CH₂Ph-Cl-2,

CH₂Ph-Cl-3, CH₂Ph-Me-2,



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CH₂Ph-Me₂-2,4, CH₂Ph-Me-4, CHMePh, CH₂Ph, CH₂Ph-NO₂-2, CH₂Ph-CF₃-3, CH₂OMe, CH₂OEt, CH₂OH, CHMeOH, CH₂NHMe, CH₂NMe₂, CHMeNMe₂, CH₂COPh, CH₂COPh-NO₂-4, CH₂COPh-Me-4, CH₂COPh-Cl-4, CH₂COPh-Me₂-2,4, CH₂COPh-CF₃-4, CH₂Ac, CH₂COEt, CHMeAc, CH₂CO₂Me, CH₂CO₂Et, CH₂CO₂Pr-n, CH₂CO₂Pr-i, CH₂CO₂Bu-t, CH₂CO₂H, CHMeCO₂H, CH₂CONHMe, CH₂CONMe₂, CH₂CONHEt, CH₂CONEt₂, CH₂CONPr-n₂, CH₂OCH₂CH=CH₂, CH₂OAc, CH₂COEt, CH₂COPr-i, CH₂COBu-t, CH₂OCO₂Me, CH₂OCO₂Et, CH₂OCO₂Pr-i, CH₂OCO₂Bu-t, CH₂SM₂, CH₂SEt, CH₂SCH₂CH=CH₂, CH₂SAC, CH₂SCOBu-t, CH₂SO₂Me, CH₂SO₂Et, CH₂SO₂CH₂CH=CH₂, CH₂NHCH₂CH=CH₂, CH₂NMeCH₂CH=CH₂, CH₂NHAc, CH₂NHCOEt, CH₂NHCO₂Me, CH₂NHCO₂Et, CH₂NMeCO₂Me, COPh, COPh-Me-4, COPh-NO₂-2, COPh-Cl₂-2,4, Ac, COEt, COPr-n, COPr-i, COBu-n, COBu-t, COCH₂Cl, COCHCl₂, COCCl₃, COCF₃, COCH₂OMe, COCH₂OPh, COCH₂CH=CHCH₃, CO₂Me, CO₂Et, CO₂Bu-t, CO₂Pr-i, CONHMe, CONMe₂, CONHEt, CONEt₂, CONPr-n₂, CON(CH₂CH=CH₂)₂, CONMePh,



CO₂CH₂Ph, CO₂Ph, SO₂Me, SO₂Et, SO₂CH₂CH=CH₂, SO₂Ph, SO₂Ph-Me-4, SO₂Ph-Cl-4, SO₂Ph-(NO₂)₂-2,4, SO₂CF₃, P(=O)(OMe)₂, P(=O)(OEt)₂, P(=O)(OPr-n)₂, P(=O)(OPr-i)₂, P(=S)(OMe)₂, P(=S)(OEt)₂, P(=O)OMeOPh, P(=O)(OCH₂CH=CH₂)₂, P(=O)OPhOCH₂CH=CH₂

When Q is a hydrogen atom, the compound may readily form a salt with a metal or with an organic base.

As such a metal, sodium, potassium, calcium, lithium, barium, magnesium, iron, copper, nickel or manganese may be mentioned.

As such an organic base, methylamine, dimethylamine, trimethylamine, ethylamine, diethylamine, triethylamine, n-propylamine, di-n-propylamine, i-propylamine, di-i-propylamine, n-butylamine, i-butylamine, sec-butylamine, tert-butylamine, piperidine, pyrrolidine, morpholine, pyridine, N,N-dimethylaniline or choline may be mentioned.

In the course of researches on the herbicidal properties of various organic compounds with an aim to develop useful herbicides, the present inventors have found that the above-mentioned compound of the present invention exhibits excellent herbicidal activities against narrow leaf weeds (gramineous and cyperaceous weeds) and against broad leaf weeds and no substantial phytotoxicity against useful plants e.g. crop plants such as Zea mays (corn), Sorghum bicolor (sorgo), Triticum spp (wheat) and Hordeum vulgare (barley). The present invention has been accomplished on the basis of this discovery.

The compound of the present invention exhibits strong herbicidal activities in each of soil treatment, soil incorporation treatment and foliage treatment. On the other hand, it exhibits no phytotoxicity against crop plants such as Zea mays, Sorghum bicolor, Triticum spp and Hordeum vulgare in a practical application in any of soil treatment, soil incorporation treatment and foliage treatment. Thus, the compound of the present invention as high selectivity and it is extremely effective for controlling weeds during the cultivation of these crop plants. Namely, the compound of the present invention exhibits strong herbicidal activities against noxious weeds such as Setaria viridis (green foxtail), Echinochloa crus-galli (barnyardgrass), Amaranthus lividus (livid amaranth), Polygonum longisetum (persicaria blumei gross), Xanthium strumarium (cocklebur), Abutilon theophrasti (velvet leaf) and Cyperus esculentus (yellow nutsedge), which develop during the cultivation of Zea mays or Sorghum bicolor. The herbicidal activities against gramineous weeds and Cyperus esculentus are remarkably high and extremely unique. Heretofore, during the cultivation of Zea mays or Sorghum bicolor, it has been common to employ atrazine or cyanazine as a triazine-type herbicide, or alachlor or metolachlor as an acid anilide-type herbicide. However, atrazine and cyanazine have poor herbicidal activities against gramineous weeds although they show high activities against broad leaf weeds, and their activities against Cyperus esculentus are very low. On the other hand, alachlor and metolachlor have poor activities against broad leaf weeds although their activities against gramineous weeds are high, and their activities against Cyperus esculentus are very poor. Thus, it has been difficult to eradicate all the weed species by a single application of such herbicides.

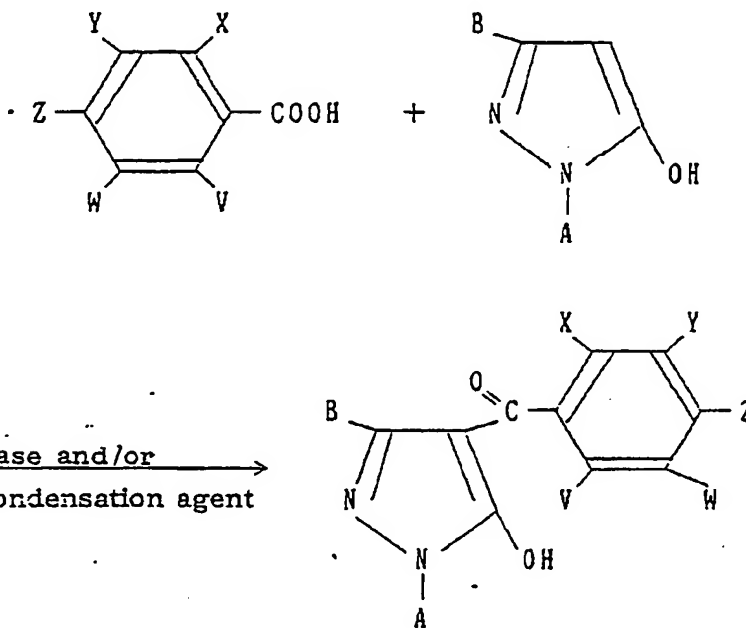
As a result of various studies, the present inventors have found the compound of the present invention which exhibits excellent herbicidal effects against a wide range of weeds, and the present invention has been accomplished on the basis of this discovery. The compound of the present invention also has a feature that it exhibits no phytotoxicity against crop plants such as Zea mays, Sorghum bicolor, Triticum spp and Hordeum vulgare and thus can safely be applied to the fields for such crop plants.

Further, the compound of the present invention includes a compound which shows selectivity between Oryza sativa (rice) and Echinochloa crus-galli (barnyardgrass), and it also includes a compound having selectivity for a useful plant such as Gossypium spp (cotton), Beta vulgaris (sugar beat) or Glycine max - (soybean).

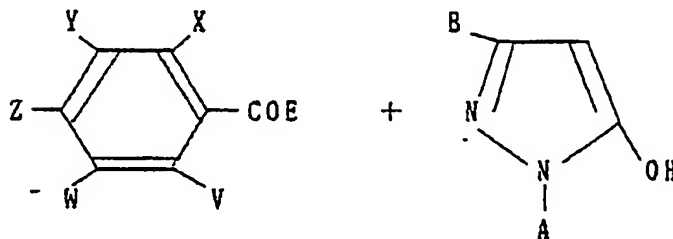
Heretofore, it has been known that 4-benzoylpyrazole derivatives have excellent herbicidal activities. For example, pyrazolate (common name) is commercially available and widely used for practical application. However, such conventional herbicides are restricted in their application to paddy fields, and their activities are very poor in their application to upland fields. Whereas, as a result of extensive research for many years on 4-benzoylpyrazole derivatives, the present inventors have finally found that the compound of the present invention which simultaneously satisfies the various conditions for substituents in the structure as specified above, exhibits strong herbicidal activities in the application to upland fields in each of soil treatment, soil incorporation treatment and foliage treatment. It has been found that the compound of the present invention exhibits particularly high activities against gramineous weeds and Cyperus esculentus.

The compound of the present invention can readily be prepared by any one of the following reactions.

(1)



(2)



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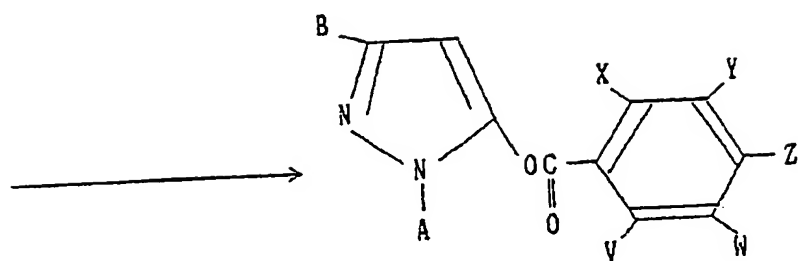
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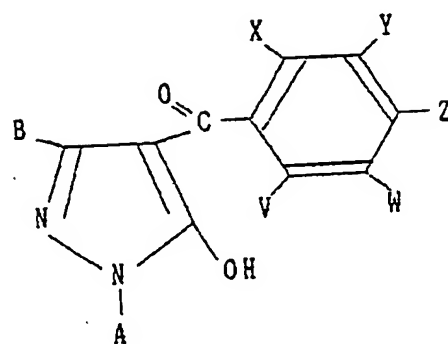
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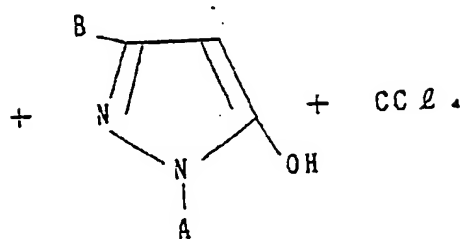
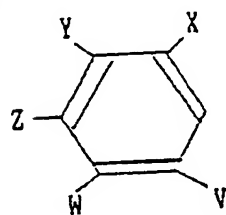
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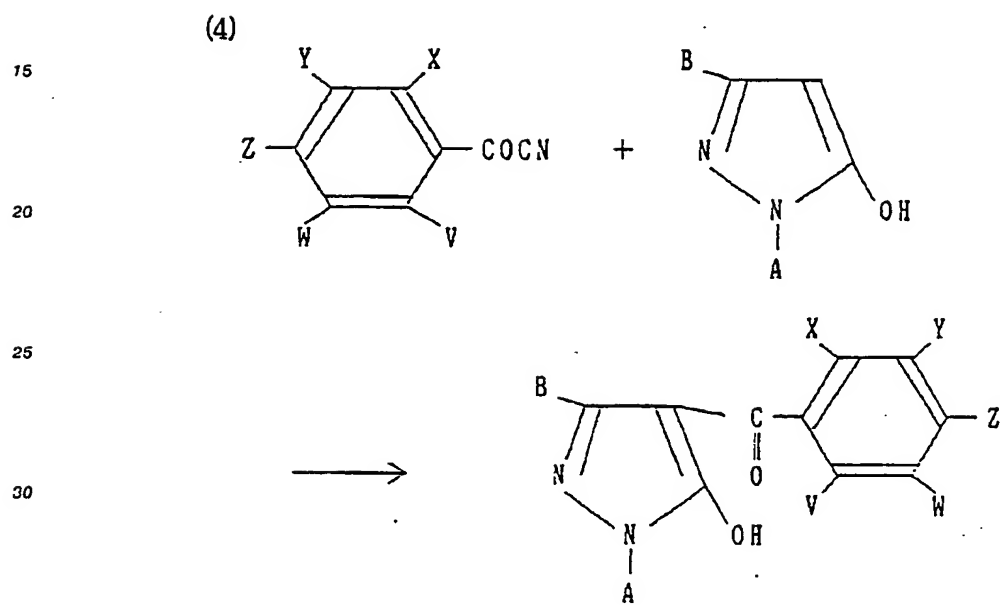
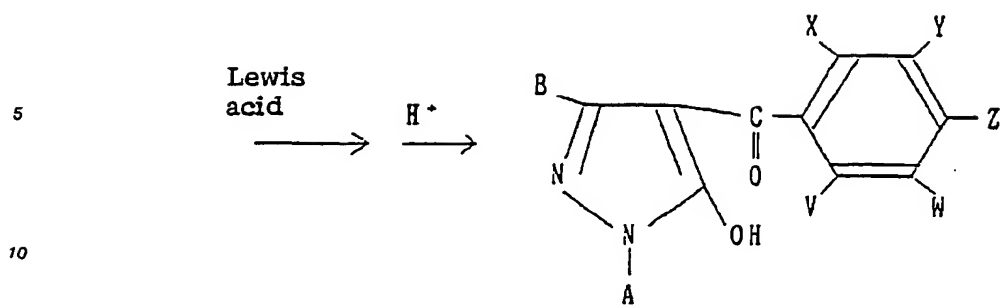


Rearrangement



(3)





(5)

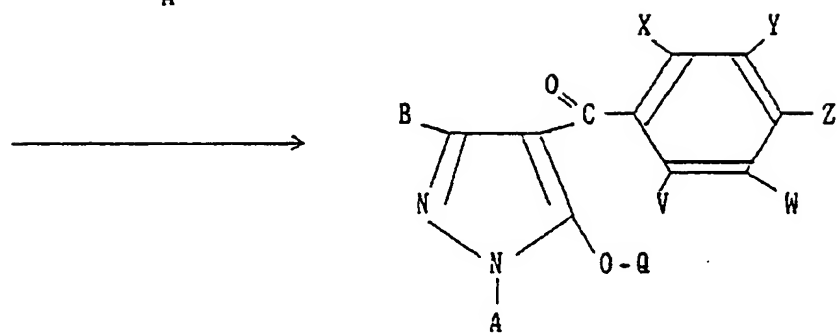
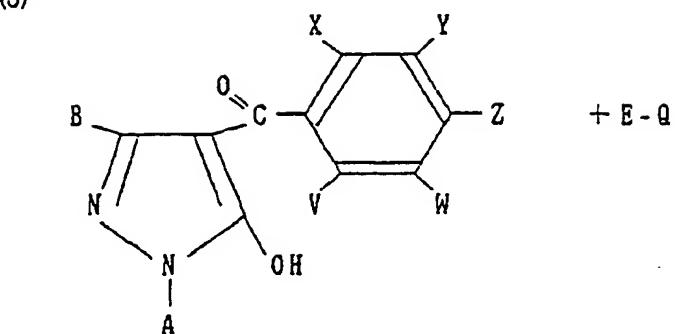
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(6)

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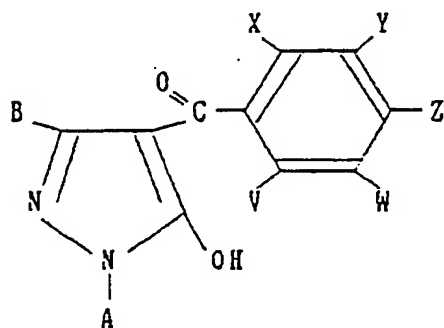
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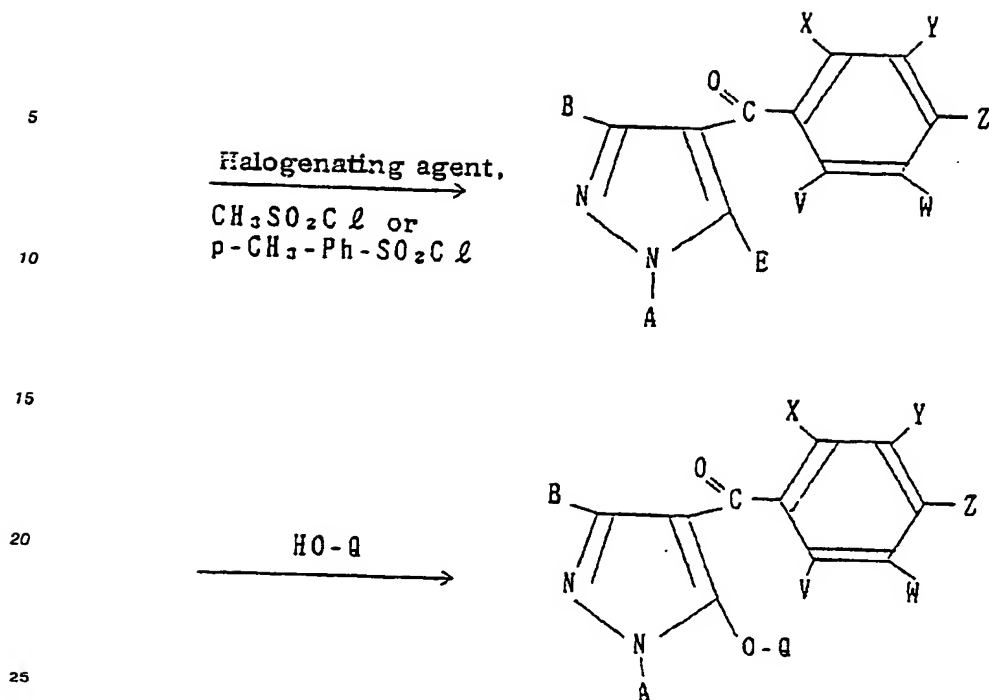
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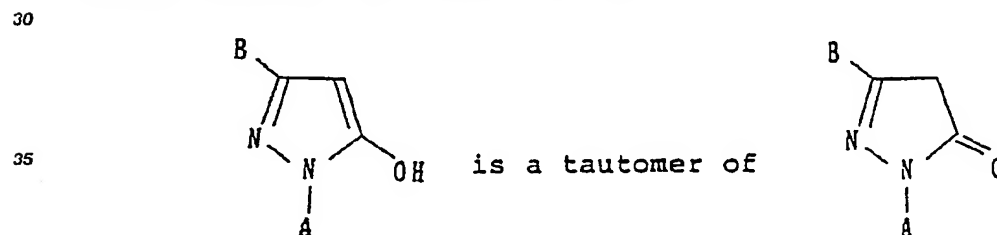
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In the above formulas, A, B, V, W, X, Y, Z and Q are as defined above, E is a halogen atom, a methanesulfonyloxy group or a p-toluenesulfonyloxy group. Further,



40 and may be represented by either formula.

Reaction scheme (1) represents a reaction wherein benzoic acid having suitable substituents and 5-hydroxypyrazole and reacted in an inert solvent in the presence of a condensation agent and a base to obtain 4-benzoyl-5-hydroxypyrazole. The condensation agent is used in an amount of from 1.0 to 1.5 mols per mol of the benzoic acid and pyrazole. As the condensation agent, N,N'-dicyclohexylcarbodiimide may be mentioned. The solvent may be any solvent so long as it is inert to the reaction. Particularly preferred is tert-butyl alcohol, tert-amyl alcohol or isopropyl alcohol. The base may not necessarily be required. However, in general, the yield can be improved by using a base. There is no particular restriction as to the base, but potassium carbonate or sodium carbonate may preferably be employed. The reaction temperature may range from room temperature to the boiling point of the solvent, but is preferably from 50 to 100°C.

50 The reaction time is usually from 0.5 to 20 hours.

Reaction scheme (2) shows a reaction wherein benzoyl chloride having suitable substituents and 5-hydroxypyrazole are reacted to form a benzoyl ester, which is then rearranged to a 4-benzoyl compound.

55 The benzoyl esterification can be accomplished in an inert solvent (such as an aromatic hydrocarbon, a fatty acid ester, a halogenated hydrocarbon, an ether, acetonitrile, dimethylsulfoxide or N,N'-dimethylformamide) or in a two phase system with such a solvent and water or in a mixture of such solvents in the presence of a suitable dehydrochlorinating agent (e.g. an inorganic base such as sodium hydroxide, potassium hydroxide or sodium hydrogen carbonate, or an organic base such as pyridine or triethylamine) at a temperature of from room temperature to 100°C for from 10 minutes to 5 hours.

The rearrangement reaction can be accomplished by means of a Lewis acid such as anhydrous aluminum chloride or a base. As the base, potassium carbonate, calcium hydroxide or sodium carbonate may be used. The Lewis acid or base is used usually in an amount of from 1 to 10 mol times.

No solvent is required. However, in some cases, it is advantageous to use a solvent having a suitable boiling point to improve the operation efficiency or the yield. As such an advantageous example, use of dioxane, toluene or xylene diglyme, may be mentioned.

The reaction temperature is usually from 50 to 150° C, and the reaction time is usually from 15 minutes to 30 hours.

Reaction scheme (3) shows a reaction wherein a benzene derivative, a 5-hydroxypyrazole derivative and carbon tetrachloride are condensed in the presence of a Lewis acid in an inert solvent or in the absence of a solvent, followed by hydrolysis to obtain a 4-benzoyl-5-hydroxypyrazole derivative. As the Lewis acid, anhydrous aluminum chloride or anhydrous aluminum bromide in an amount of at least the theoretical amount for the reaction is preferred. The solvent may be of any type so long as it is inert to the reaction. However, a chlorine-type solvent such as methylene chloride, dichloroethane or tetrachloroethane is preferred. The temperature for condensation may range from 0° C to the boiling point of the solvent, but it is preferably from 10 to 80° C. The hydrolysis is conducted in the presence of hydrochloric acid or sulfuric acid. The temperature for the hydrolysis is preferably from room temperature to 100° C. The time for the hydrolysis is usually from 0.1 to 10 hours.

Reaction scheme (4) shows a reaction wherein a benzoyl cyanide derivative and a 5-hydroxypyrazole derivative are reacted in the presence of a Lewis acid and a base in an inert solvent or in the absence of a solvent to obtain a 4-benzoyl-5-hydroxypyrazole. As the Lewis acid, zinc chloride, aluminum chloride or aluminum bromide may be used. As the base, pyridine or triethylamine may be mentioned. The Lewis acid and the base are used usually in an amount of from 1 to 10 mol times. As the solvent, methylene chloride, dichloroethane or tetrachloroethane may be mentioned. The reaction temperature is usually from 0 to 80° C, preferably from 10 to 50° C. The reaction time is from 0.5 to 20 hours.

Reaction scheme (5) shows a reaction wherein 4-benzoyl-5-hydroxypyrazole is condensed with a halide, a methanesulfonic acid ester or a p-toluenesulfonic acid ester.

For this reaction, it is preferred to employ from 1 to 3 mol times of a dehydrohalogenating agent. As such a dehydrohalogenating agent, an inorganic base such as sodium hydroxide, potassium hydroxide, sodium carbonate, sodium hydrogencarbonate or potassium carbonate, or an organic base such as pyridine or triethylamine, may be mentioned.

There is no particular restriction as to the solvent so long as it is inert to the reaction. A wide range of solvents including an aromatic hydrocarbon, a fatty acid ester, a halogenated hydrocarbon, an ether, a ketone, an aliphatic hydrocarbon, acetonitrile, dimethylsulfoxide and dimethylformamide may be used.

The reaction temperature may be optionally selected within a range of from room temperature to the boiling point of the solvent. The reaction time is usually from 30 minutes to 30 hours.

Reaction scheme (6) shows a reaction wherein 4-benzoyl-5-hydroxypyrazole is converted to a 5-halogeno compound by a halogenating agent, or to a methanesulfonate compound or a p-toluenesulfonate compound by methane sulfonyl chloride or p-toluenesulfonyl chloride, followed by condensation with a suitable alcohol or acid.

As the halogenating agent, phosphorus oxychloride, phosphorus pentachloride or thionyl chloride may be mentioned.

As the solvent, a wide range of solvents inert to the reaction, such as dimethylformamide, may be employed. However, the reaction can be conducted without any solvent.

The reaction temperature is preferably from 30 to 150° C, and the reaction time is usually from 30 minutes to 10 hours. In some cases, the reaction time may be shortened or the yield may be improved by an addition of a dehydrohalogenating agent.

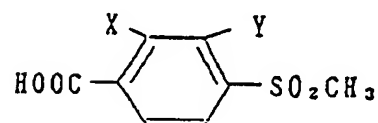
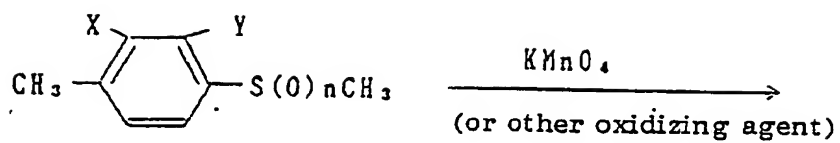
The condensation reaction with an alcohol or acid is conducted by an addition of a dehydrohalogenating agent.

As such a dehydrohalogenating agent, a base such as sodium hydroxide, potassium hydroxide, sodium carbonate, potassium carbonate, sodium alkoxide or sodium hydride may be employed.

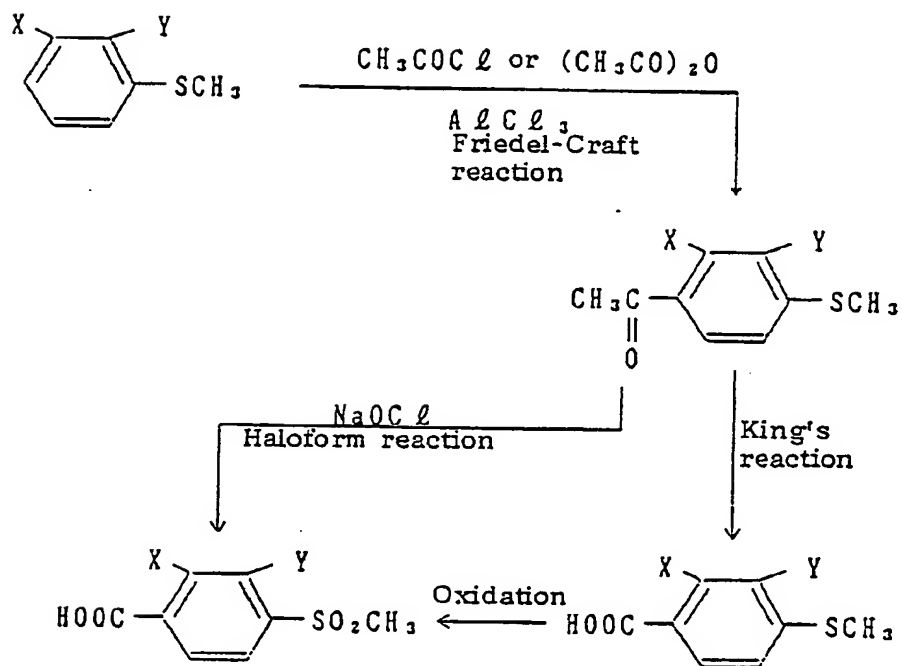
The solvent may be any solvent which is inert to the reaction (such as an aromatic hydrocarbon, an ether, a ketone or N,N'-dimethylformamide). The reaction temperature may be selected within a range of from room temperature to the boiling point of the solvent.

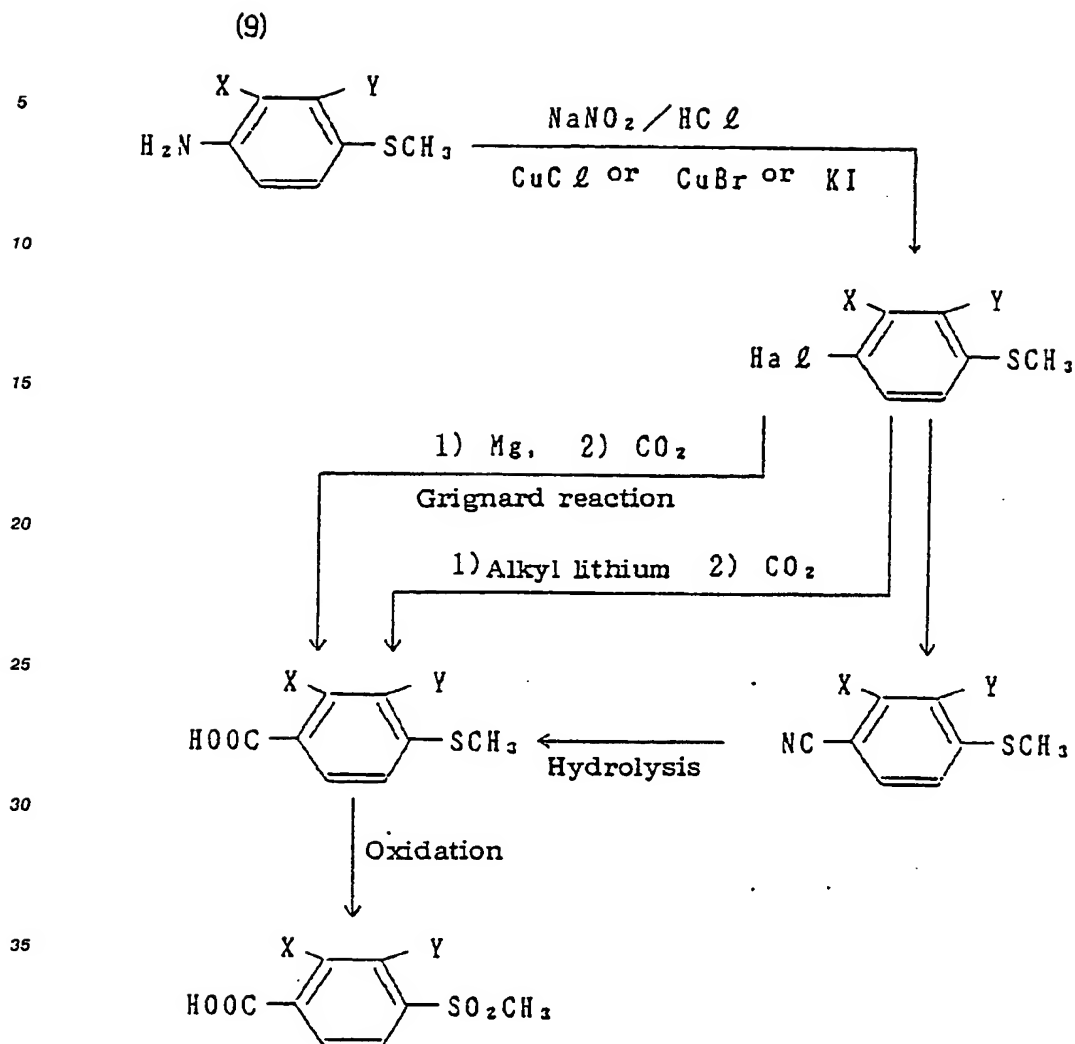
The substituted benzene derivatives used as the starting materials for the compounds of the present invention have novel structures, and they may readily be prepared by a proper combination of various known syntheses. For instance, compounds wherein the substituent Z in the benzene ring is -S(O)_nCH₃ can be prepared in accordance with the following reaction schemes.

(7)



(8)





In the above formulas, X and Y are as defined above, and Hal is a halogen atom.

Now, the preparation of the substituted benzene derivatives and pyrazole derivatives will be described in detail with reference to Examples. However, it should be understood that the present invention is by no means restricted by such specific Examples.

EXAMPLE 1

50 Preparation of 4-(2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoyl)-1-ethyl-5-hydroxypyrazole

(1) (2-methoxy)ethyl 2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoate

55 1.2 g of 2-chloro-3-hydroxy-4-methanesulfonylbenzoic acid, 1.4 g of potassium carbonate and 2.1 g of 2-bromoethyl methyl ether were put into 20 ml of N,N-dimethylformamide and reacted under heating at a temperature of from 60 to 70°C for from 6 to 7 hours. Then, the solvent was distilled off, and after an addition of water, the reaction mixture was extracted with chloroform. The extract was dried over anhydrous

sodium sulfate, and the solvent was distilled off to obtain 1.9 g of a crude product of the above identified compound.

5 (2) 2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoic acid

1.9 g of the crude product of (2-methoxy)ethyl 2-chloro-4-methanesulfonyl-3-(2-methoxy)-ethoxybenzoate was dissolved in 50 ml of ethanol, and 20 ml of an aqueous solution containing 1 g of sodium hydroxide was added thereto. The mixture was stirred at room temperature for 30 minutes. Then, 10 ethanol was distilled off, and water was added to the residue. The mixture was washed with chloroform, then acidified with concentrated hydrochloric acid and extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain 1.4 g of a crude product of the above identified compound. To the crude product, n-hexane was added, and the mixture was left to stand, whereby the desired product was gradually crystallized. Melting point: 89-92 °C

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(3) 4-(2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoyl)-1-ethyl-5-hydroxypyrazole

1.2 g of the crude product of 2-chloro-4-methanesulfonyl-3-(2-methoxy)ethoxybenzoic acid, 0.3 g of potassium carbonate, 0.45 g of 1-ethyl-5-hydroxypyrazole and 0.77 g of N,N'-dicyclohexyl carbodiimide were put into 40 ml of t-amyl alcohol, and the mixture was stirred under heating at a temperature of from 80 to 90 °C for from 4 to 5 hours. The solvent was distilled off, and a dilute potassium carbonate aqueous solution was added to the residue. The mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and extracted with chloroform. The extract was dried over 25 anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude product was recrystallized from ethanol to obtain 0.3 g of the desired product. Melting point: 159-160 °C

30 **EXAMPLE 2**

Preparation of 4-(3-benzyloxy-2-chloro-4-methanesulfonylbenzoyl)-1-ethyl-5-hydroxypyrazole

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(1) Benzyl 3-benzyloxy-2-chloro-4-methanesulfonylbenzoate

1.5 g of 2-chloro-3-hydroxy-4-methanesulfonylbenzoic acid, 1.7 g of potassium carbonate and 5.1 g of benzyl bromide were put into 50 ml of dimethylformamide, and the mixture was stirred at room temperature overnight and then heated at a temperature of from 60 to 70 °C for 3 hours. The solvent was distilled off, and water was added to the residue. The mixture was extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude product was recrystallized from ethanol to obtain 2.5 g of the desired product.

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(2) 3-benzyloxy-2-chloro-4-methanesulfonylbenzoic acid

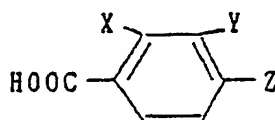
2.5 g of benzyl 3-benzyloxy-2-chloro-4-methanesulfonylbenzoate was put into 50 ml of ethanol, and 25 ml of an aqueous solution containing 1 g of sodium hydrochloride was added thereto. The mixture was stirred at room temperature for 30 minutes. Then, ethanol was distilled off, and water was added to the residue. The mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and then extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude 55 product was washed with ethanol-isopropyl ether to obtain 1.0 g of the desired product.

(3) 4-(3-benzyloxy-2-chloro-4-methanesulfonylbenzoyl)-ethyl-5-hydroxypyrazole

1.0 g of 3-benzyloxy-2-chloro-4-methanesulfonylbenzoic acid, 0.23 g of potassium carbonate, 0.24 g of 1-ethyl-5-hydroxy-pyrazole and 0.59 g of N,N'-dicyclohexylcarbodiimide were put into 20 ml of t-amyl alcohol, and the mixture was stirred under heating at a temperature of from 80 to 90°C for 4 hours. The solvent was distilled off, and then an aqueous potassium carbonate solution was added to the residue. The mixture was washed with chloroform. The aqueous layer was acidified with concentrated hydrochloric acid and the extracted with chloroform. The extract was dried over anhydrous sodium sulfate. Then, the solvent was distilled off to obtain a crude product of the above identified compound. The crude product was recrystallized from ethanol to obtain 0.3 g of the desired product. Melting point: 162-165°C

The physical properties of the benzoic acids and the pyrazole derivatives prepared in accordance with the preceding Examples will be given in Tables 1 and 2 including those of the preceding Examples.

Table 1





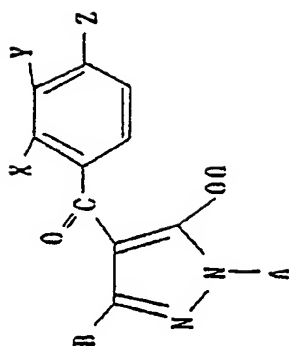
X	Y	Z	Melting point (°C)
Cl	OCH ₂ 	SO ₂ Me	102 ~ 107
Cl	OCH ₂ CH ₂ OPh	SO ₂ Me	147 ~ 151
Cl	O 	SO ₂ Me	153 ~ 157
Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	90 ~ 94
Cl	OCH ₂ CH=CHMe	SO ₂ Me	113 ~ 118
Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	89 ~ 92

Table 2



Compound No.	A	B	X	Y	Z	Q	Melting point (°C)
1	Et	II	C ℓ	OCH ₂ CH ₂ OMe	SO ₂ Me	II	159~160
2	Et	II	C ℓ	OCH ₂ Ph	SO ₂ Me	II	162~165
3	Et	II	C ℓ		SO ₂ Me	II	156~159
4	Et	II	C ℓ		SO ₂ Me	II	153~157
5	Et	II	C ℓ	OCH ₂ CH ₂ OPh	SO ₂ Me	II	148~150

Table 2 (continued)



Compound No.	A	B	X	Y	Z	Q	Melting point (°C)
6	Et	H	C \varnothing	OC(CH ₂) ₂ C \equiv CH	SO ₂ Me	H	150.7 ~ 152.4
7	Et	H	C \varnothing	OC(CH ₂) ₂ CH ₂ OEt	SO ₂ Me	H	152.3 ~ 154.9
8	Et	H	C \varnothing	OC(CH ₂) ₂ CH ₂ CH=CH ₂	SO ₂ Me	H	131 ~ 134
9	Et	H	C \varnothing	OC(CH ₂) ₂ CH ₂ SH	SO ₂ Me	H	Oily substance
10	Et	H	C \varnothing	OC(CH ₂) ₂ CH ₂ SO ₂ Me	SO ₂ Me	H	206 ~ 208
11	Et	H	C \varnothing	OC(CH ₂) ₂ CH ₂ OPr-i	SO ₂ Me	H	171 ~ 174
12	Et	H	C \varnothing	OC(CH ₂) ₂ 	SO ₂ Me	H	191 ~ 193
13	Me	Me	C \varnothing	OC(CH ₂) ₂ 	SO ₂ Me	H	181 ~ 183.5

Table 2 (continued)







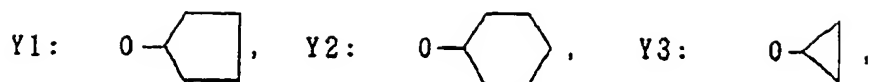
Compound No.	A	B	X	Y	Z	n	Melting point (°C)
14	Et		C ℓ	OCCH ₂ CH ₂ - 	SO ₂ Me		100 ~ 101
15	Et		C ℓ	OCCH ₂ - 	SO ₂ Me		171 ~ 173
16	Me	Me	C ℓ	OCCH ₂ - 	SO ₂ Me		138 ~ 142
17	Me	Me	C ℓ	OCCH ₂ - 	SO ₂ Me		100.5 ~ 101
18	Et		C ℓ	OCCH ₂ - 	SO ₂ Me		154 ~ 158

Table 2 (continued)

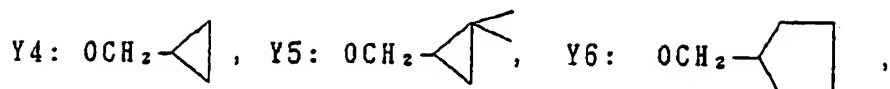
Compound No.	A	B	X	Y	Z	n	Melting (°C) point
19	Bt	II	C ℓ	OC(=O)CH ₂ - 	SO ₂ Me	II	175 ~ 179
20	i-Pr	II	C ℓ	OC(=O)CH ₂ OMe	SO ₂ Me	II	180 ~ 183

Compounds which can be prepared in the same manner as the preceding Examples will be given in Tables 3 to 8 including those of the preceding Examples. However, the present invention is not restricted to such compounds.

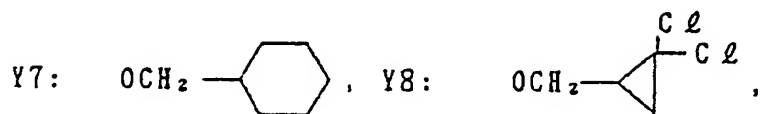
Various symbols used in Tables 3 to 8 have the following meanings.



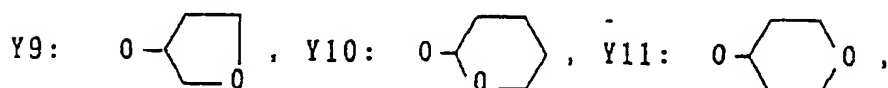
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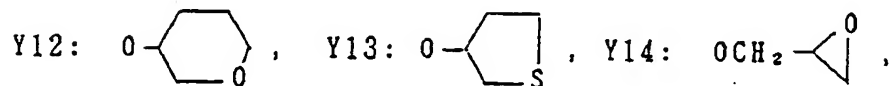
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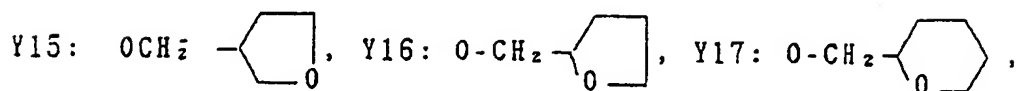
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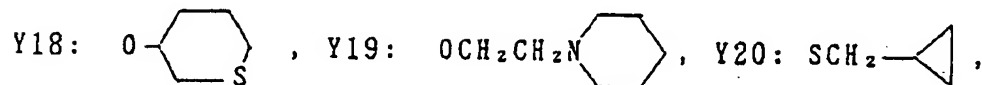
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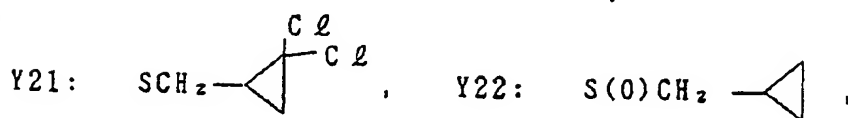
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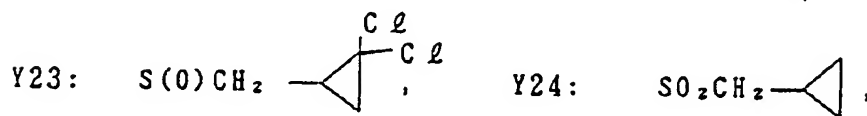
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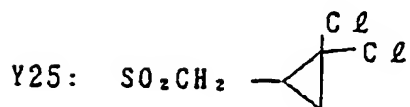
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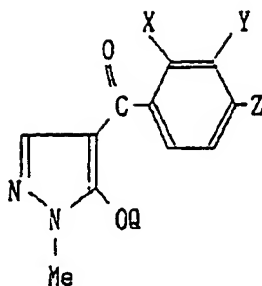
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Table 3



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H

Table 3 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CCl =CH ₂	SO ₂ Me	H
	Me	OCH ₂ CCl =CHCl	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
10	Me	OPh	SO ₂ Me	H
	Me	OPh-Me-2	SO ₂ Me	H
	Me	OPh-Cl-4	SO ₂ Me	H
	Me	OPh-NO ₂ -4	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
15	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	Me	OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CHMeOMe	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
30	Me	OCH ₂ Ph	SO ₂ Me	H
	Me	OCHMePh	SO ₂ Me	H
	Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
35	Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	Me	Y9	SO ₂ Me	H
	Me	Y10	SO ₂ Me	H
	Me	Y11	SO ₂ Me	H
40	Me	Y12	SO ₂ Me	H
	Me	Y13	SO ₂ Me	H
	Me	Y14	SO ₂ Me	H
	Me	Y15	SO ₂ Me	H
	Me	Y16	SO ₂ Me	H
45	Me	Y17	SO ₂ Me	H
	Me	Y18	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
10	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	Me	Y19	SO ₂ Me	H
	Me	OCH ₂ COOMe	SO ₂ Me	H
	Me	OCH ₂ COOEt	SO ₂ Me	H
15	Me	OCH ₂ COOPr-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-t	SO ₂ Me	H
	Me	OCH ₂ COO-Y4	SO ₂ Me	H
	Me	OCHMeCOOMe	SO ₂ Me	H
20	Me	OCHMeCOOEt	SO ₂ Me	H
	Me	OCHMeCOOPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Me	OCH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
30	Me	OCOOMe	SO ₂ Me	H
	Me	OCOOPr-i	SO ₂ Me	H
	Me	CONH ₂	SO ₂ Me	H
	Me	CONHMe	SO ₂ Me	H
	Me	CONMe ₂	SO ₂ Me	H
35	Me	OP(O)(OMe) ₂	SO ₂ Me	H
	Me	Y20	SO ₂ Me	H
	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SCH ₂ C≡CH	SO ₂ Me	H
40	Me	SCH ₂ CF ₃	SO ₂ Me	H
	Me	SCH ₂ CCl ₃	SO ₂ Me	H
	Me	Y21	SO ₂ Me	H
	Me	SPh	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
45	Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	Me	Y22	SO ₂ Me	H
	Me	S(O)CH ₂ CH =CH ₂	SO ₂ Me	H
	Me	S(O)CH ₂ CH =CMe ₂	SO ₂ Me	H
10	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y23	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
15	Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y24	SO ₂ Me	H
	Me	Y25	SO ₂ Me	H
20	Me	SO ₂ Ph	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
25	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
30	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
35	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
40	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
45	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh

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Table 3 (continued)

	X	Y	Z	Q
5	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OMe	Cl	H
10	Me	OCH ₂ CH ₂ OEt	Cl	H
	Me	OCH ₂ CH ₂ OPr-i	Cl	H
	Me	OCHMeCH ₂ OMe	Cl	H
	Me	OCH ₂ COOMe	Cl	H
	Me	OCH ₂ CH ₂ SMe	Cl	H
15	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Me	SCH ₂ CH ₂ OMe	Cl	H
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
20	Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
25	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
30	Cl	Y1	SO ₂ Me	H
	Cl	Y2	SO ₂ Me	H
	Cl	Y3	SO ₂ Me	H
	Cl	Y4	SO ₂ Me	H
	Cl	Y5	SO ₂ Me	H
35	Cl	Y6	SO ₂ Me	H
	Cl	Y7	SO ₂ Me	H
	Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCHMeCH=CH ₂	SO ₂ Me	H
	Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
40	Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
	Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ C≡CH	SO ₂ Me	H
45	Cl	OCHMeC≡CH	SO ₂ Me	H
	Cl	OCMe ₂ C≡CH	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	C1	$\text{OCH}_2\text{C} \equiv \text{CMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	C1	OCH_2CHF_2	SO_2Me	H
	C1	OCH_2CF_3	SO_2Me	H
10	C1	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	C1	OCH_2CCl_3	SO_2Me	H
	C1	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
15	C1	Y8	SO_2Me	H
	C1	$\text{OCH}_2\text{CCl} = \text{CH}_2$	SO_2Me	H
	C1	$\text{OCH}_2\text{CCl} = \text{CHCl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	C1	OPh	SO_2Me	H
20	C1	OPh-Me-2	SO_2Me	H
	C1	OPh-Cl-4	SO_2Me	H
	C1	OPh-NO ₂ -4	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
25	C1	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
30	C1	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	C1	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
35	C1	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
	C1	OCH_2Ph	SO_2Me	H
40	C1	OCHMePh	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	C1	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	C1	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
45	C1	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	C1	Y9	SO ₂ Me	H
	C1	Y10	SO ₂ Me	H
	C1	Y11	SO ₂ Me	H
	C1	Y12	SO ₂ Me	H
	C1	Y13	SO ₂ Me	H
10	C1	Y14	SO ₂ Me	H
	C1	Y15	SO ₂ Me	H
	C1	Y16	SO ₂ Me	H
	C1	Y17	SO ₂ Me	H
	C1	Y18	SO ₂ Me	H
15	C1	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
20	C1	Y19	SO ₂ Me	H
	C1	OCH ₂ COOMe	SO ₂ Me	H
	C1	OCH ₂ COOEt	SO ₂ Me	H
	C1	OCH ₂ COOPr-i	SO ₂ Me	H
	C1	OCH ₂ COOBu-i	SO ₂ Me	H
25	C1	OCH ₂ COOBu-t	SO ₂ Me	H
	C1	OCH ₂ COO-Y4	SO ₂ Me	H
	C1	OCHMeCOOMe	SO ₂ Me	H
	C1	OCHMeCOOEt	SO ₂ Me	H
	C1	OCHMeCOOPr-i	SO ₂ Me	H
30	C1	OCH ₂ CH ₂ CN	SO ₂ Me	H
	C1	OCH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
35	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	C1	OCOOMe	SO ₂ Me	H
40	C1	OCOOPr-i	SO ₂ Me	H
	C1	OCONH ₂	SO ₂ Me	H
	C1	OCONHMe	SO ₂ Me	H
	C1	OCONMe ₂	SO ₂ Me	H
	C1	OP(O)(OMe) ₂	SO ₂ Me	H
45	C1	Y20	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	C1	SCH ₂ CH=CH ₂	SO ₂ Me	H
	C1	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	C1	SCH ₂ C≡CH	SO ₂ Me	H
10	C1	SCH ₂ CF ₃	SO ₂ Me	H
	C1	SCH ₂ CCl ₃	SO ₂ Me	H
	C1	Y21	SO ₂ Me	H
	C1	SPh	SO ₂ Me	H
	C1	SCH ₂ CH ₂ OMe	SO ₂ Me	H
15	C1	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	C1	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	C1	Y22	SO ₂ Me	H
	C1	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	C1	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
20	C1	S(O)CH ₂ C≡CH	SO ₂ Me	H
	C1	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	C1	Y23	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
25	C1	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	C1	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	C1	Y24	SO ₂ Me	H
	C1	Y25	SO ₂ Me	H
30	C1	SO ₂ Ph	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
35	C1	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	C1	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
40	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	C1	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
45	C1	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	C1	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph

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Table 3 (continued)

	X	Y	Z	Q
5	C1	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
10	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
15	C1	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	C1	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	C1	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	C1	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ OMe	C1	H
20	C1	OCH ₂ CH ₂ OE t	C1	H
	C1	OCH ₂ CH ₂ OPr-i	C1	H
	C1	OCHMeCH ₂ OMe	C1	H
	C1	OCH ₂ COOMe	C1	H
	C1	OCH ₂ CH ₂ SMe	C1	H
25	C1	OCH ₂ CH ₂ SO ₂ Me	C1	H
	C1	SCH ₂ CH ₂ OMe	C1	H
	C1	SO ₂ CH ₂ CH ₂ OMe	C1	H
	C1	OCH ₂ CH ₂ OMe	C1	CH ₂ Ph
	C1	OCH ₂ CH ₂ SMe	C1	CH ₂ Ph
30	C1	OCH ₂ CH ₂ SOMe	C1	CH ₂ Ph
	C1	OCH ₂ CH ₂ SO ₂ Me	C1	CH ₂ Ph
	C1	SCH ₂ CH ₂ OMe	C1	CH ₂ Ph
	C1	SO ₂ CH ₂ CH ₂ OMe	C1	CH ₂ Ph
	C1	OCH ₂ CH ₂ OMe	C1	CH ₂ COPh
35	C1	OCH ₂ CH ₂ SMe	C1	CH ₂ COPh
	C1	OCH ₂ CH ₂ SO ₂ Me	C1	CH ₂ COPh
	C1	SCH ₂ CH ₂ OMe	C1	CH ₂ COPh
	C1	SCH ₂ CH ₂ OE t	C1	CH ₂ COPh
	C1	SO ₂ CH ₂ CH ₂ OMe	C1	CH ₂ COPh
40	OMe	Y1	SO ₂ Me	H
	OMe	Y2	SO ₂ Me	H
	OMe	Y3	SO ₂ Me	H
	OMe	Y4	SO ₂ Me	H
	OMe	Y5	SO ₂ Me	H
45	OMe	Y6	SO ₂ Me	H
	OMe	Y7	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	OMe	$\text{OCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCHMeCH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{CH}=\text{CH}_2$	SO_2Me	H
10	OMe	$\text{OCH}_2\text{CMe}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CHMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
15	OMe	$\text{OCHMeC}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	OMe	OCH_2CHF_2	SO_2Me	H
20	OMe	OCH_2CF_3	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	OCH_2CCl_3	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
25	OMe	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
	OMe	Y8	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
30	OMe	OPh	SO_2Me	H
	OMe	OPh-Me-2	SO_2Me	H
	OMe	OPh-Cl-4	SO_2Me	H
	OMe	OPh-NO ₂ -4	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
35	OMe	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
40	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
45	OMe	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
10	OMe	OCH ₂ Ph	SO ₂ Me	H
	OMe	OCHMePh	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
15	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	OMe	Y9	SO ₂ Me	H
	OMe	Y10	SO ₂ Me	H
	OMe	Y11	SO ₂ Me	H
20	OMe	Y12	SO ₂ Me	H
	OMe	Y13	SO ₂ Me	H
	OMe	Y14	SO ₂ Me	H
	OMe	Y15	SO ₂ Me	H
	OMe	Y16	SO ₂ Me	H
25	OMe	Y17	SO ₂ Me	H
	OMe	Y18	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
30	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	OMe	Y19	SO ₂ Me	H
	OMe	OCH ₂ COOMe	SO ₂ Me	H
	OMe	OCH ₂ COOE t	SO ₂ Me	H
35	OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	OMe	OCHMeCOOMe	SO ₂ Me	H
40	OMe	OCHMeCOOE t	SO ₂ Me	H
	OMe	OCHMeCOOPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	OMe	OCH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
45	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ SP _r -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)P _r -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ P _r -i	SO ₂ Me	H
10	OMe	OCOOMe	SO ₂ Me	H
	OMe	OCOOP _r -i	SO ₂ Me	H
	OMe	OCONH ₂	SO ₂ Me	H
	OMe	OCONHMe	SO ₂ Me	H
	OMe	OCONMe ₂	SO ₂ Me	H
15	OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	OMe	Y20	SO ₂ Me	H
	OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SCH ₂ C≡CH	SO ₂ Me	H
20	OMe	SCH ₂ CF ₃	SO ₂ Me	H
	OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	OMe	Y21	SO ₂ Me	H
	OMe	SPh	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
25	OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OP _r -i	SO ₂ Me	H
	OMe	Y22	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
30	OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
	OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y23	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
35	OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y24	SO ₂ Me	H
	OMe	Y25	SO ₂ Me	H
40	OMe	SO ₂ Ph	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OP _r -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
45	OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OP _r -i	SO ₂ Me	CH ₂ Ph

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Table 3 (continued)

	X	Y	Z	Q
5	OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
10	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SP <i>r</i> -i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
15	OMe	SCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ COPh
20	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SP <i>r</i> -i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
25	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OMe	Cl	H
30	OMe	OCH ₂ CH ₂ OE <i>t</i>	Cl	H
	OMe	OCH ₂ CH ₂ OP <i>r</i> -i	Cl	H
	OMe	OCHMeCH ₂ OMe	Cl	H
	OMe	OCH ₂ COOMe	Cl	H
	OMe	OCH ₂ CH ₂ SMe	Cl	H
35	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	OMe	SCH ₂ CH ₂ OMe	Cl	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
40	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
45	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh

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Table 3 (continued)

	X	Y	Z	Q
5	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
10	CH ₂ OMe	Y1	SO ₂ Me	H
	CH ₂ OMe	Y2	SO ₂ Me	H
	CH ₂ OMe	Y3	SO ₂ Me	H
	CH ₂ OMe	Y4	SO ₂ Me	H
	CH ₂ OMe	Y5	SO ₂ Me	H
15	CH ₂ OMe	Y6	SO ₂ Me	H
	CH ₂ OMe	Y7	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
25	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
30	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
	CH ₂ OMe	Y8	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
40	CH ₂ OMe	OPh	SO ₂ Me	H
	CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
	CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCHMePh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	CH ₂ OMe	Y9	SO ₂ Me	H
	CH ₂ OMe	Y10	SO ₂ Me	H
	CH ₂ OMe	Y11	SO ₂ Me	H
30	CH ₂ OMe	Y12	SO ₂ Me	H
	CH ₂ OMe	Y13	SO ₂ Me	H
	CH ₂ OMe	Y14	SO ₂ Me	H
	CH ₂ OMe	Y15	SO ₂ Me	H
	CH ₂ OMe	Y16	SO ₂ Me	H
35	CH ₂ OMe	Y17	SO ₂ Me	H
	CH ₂ OMe	Y18	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
40	CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	CH ₂ OMe	Y19	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
10	CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
20	CH ₂ OMe	OCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCONH ₂	SO ₂ Me	H
	CH ₂ OMe	OCONHMe	SO ₂ Me	H
	CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
25	CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	CH ₂ OMe	Y20	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
30	CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	Y21	SO ₂ Me	H
	CH ₂ OMe	SPh	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
35	CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	Y22	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
40	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y23	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
45	CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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Table 3 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y24	SO ₂ Me	H
	CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
15	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
20	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
30	CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
35	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
40	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ COOMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
45	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H

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Table 3 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
10	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
15	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

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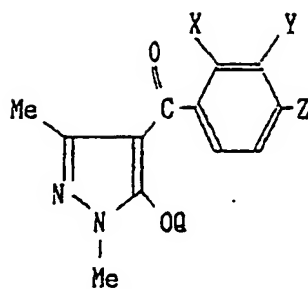
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Table 4



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H

Table 4 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CCl = CH ₂	SO ₂ Me	H
	Me	OCH ₂ CCl = CHCl	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
10	Me	OPh	SO ₂ Me	H
	Me	OPh-Me-2	SO ₂ Me	H
	Me	OPh-Cl-4	SO ₂ Me	H
	Me	OPh-NO ₂ -4	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
15	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	Me	OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CHMeOMe	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
30	Me	OCH ₂ Ph	SO ₂ Me	H
	Me	OCHMePh	SO ₂ Me	H
	Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
35	Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	Me	Y9	SO ₂ Me	H
	Me	Y10	SO ₂ Me	H
	Me	Y11	SO ₂ Me	H
40	Me	Y12	SO ₂ Me	H
	Me	Y13	SO ₂ Me	H
	Me	Y14	SO ₂ Me	H
	Me	Y15	SO ₂ Me	H
	Me	Y16	SO ₂ Me	H
45	Me	Y17	SO ₂ Me	H
	Me	Y18	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
10	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	Me	Y19	SO ₂ Me	H
	Me	OCH ₂ COOMe	SO ₂ Me	H
	Me	OCH ₂ COOEt	SO ₂ Me	H
15	Me	OCH ₂ COOPr-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-t	SO ₂ Me	H
	Me	OCH ₂ COO-Y4	SO ₂ Me	H
	Me	OCHMeCOOMe	SO ₂ Me	H
20	Me	OCHMeCOOEt	SO ₂ Me	H
	Me	OCHMeCOOPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Me	OCH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
30	Me	OCOOMe	SO ₂ Me	H
	Me	OCOOPr-i	SO ₂ Me	H
	Me	OCNH ₂	SO ₂ Me	H
	Me	OCNHMe	SO ₂ Me	H
	Me	OCNMe ₂	SO ₂ Me	H
35	Me	OP(O)(OMe) ₂	SO ₂ Me	H
	Me	Y20	SO ₂ Me	H
	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SCH ₂ C≡CH	SO ₂ Me	H
40	Me	SCH ₂ CF ₃	SO ₂ Me	H
	Me	SCH ₂ CCl ₃	SO ₂ Me	H
	Me	Y21	SO ₂ Me	H
	Me	SPh	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
45	Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	Me	Y22	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
10	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y23	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
15	Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y24	SO ₂ Me	H
	Me	Y25	SO ₂ Me	H
20	Me	SO ₂ Ph	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
25	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
30	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
35	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
40	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
45	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh

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Table 4 (continued)

	X	Y	Z	Q
5	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OEt	Cl	H
10	Me	OCH ₂ CH ₂ OPr-i	Cl	H
	Me	OCHMeCH ₂ OMe	Cl	H
	Me	OCH ₂ COOMe	Cl	H
	Me	OCH ₂ CH ₂ SMe	Cl	H
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
15	Me	SCH ₂ CH ₂ OMe	Cl	H
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
20	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
25	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	Y1	SO ₂ Me	H
30	Cl	Y2	SO ₂ Me	H
	Cl	Y3	SO ₂ Me	H
	Cl	Y4	SO ₂ Me	H
	Cl	Y5	SO ₂ Me	H
	Cl	Y6	SO ₂ Me	H
35	Cl	Y7	SO ₂ Me	H
	Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCHMeCH=CH ₂	SO ₂ Me	H
	Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
40	Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
	Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ C≡CH	SO ₂ Me	H
	Cl	OCHMeC≡CH	SO ₂ Me	H
45	Cl	OCMe ₂ C≡CH	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	C1	$\text{OCH}_2\text{C} \equiv \text{CMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	C1	OCH_2CHF_2	SO_2Me	H
	C1	OCH_2CF_3	SO_2Me	H
10	C1	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	C1	OCH_2CCl_3	SO_2Me	H
	C1	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
15	C1	Y8	SO_2Me	H
	C1	$\text{OCH}_2\text{CCl} = \text{CH}_2$	SO_2Me	H
	C1	$\text{OCH}_2\text{CCl} = \text{CHCl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	C1	OPh	SO_2Me	H
20	C1	OPh-Me-2	SO_2Me	H
	C1	OPh-Cl-4	SO_2Me	H
	C1	OPh-NO ₂ -4	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
25	C1	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
30	C1	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	C1	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
35	C1	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
	C1	OCH_2Ph	SO_2Me	H
40	C1	OCHMePh	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	C1	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	C1	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	C1	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
45	C1	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	C1	Y9	SO ₂ Me	H
	C1	Y10	SO ₂ Me	H
	C1	Y11	SO ₂ Me	H
10	C1	Y12	SO ₂ Me	H
	C1	Y13	SO ₂ Me	H
	C1	Y14	SO ₂ Me	H
	C1	Y15	SO ₂ Me	H
	C1	Y16	SO ₂ Me	H
15	C1	Y17	SO ₂ Me	H
	C1	Y18	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
20	C1	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	C1	Y19	SO ₂ Me	H
	C1	OCH ₂ COOMe	SO ₂ Me	H
	C1	OCH ₂ COOEt	SO ₂ Me	H
25	C1	OCH ₂ COOPr-i	SO ₂ Me	H
	C1	OCH ₂ COOBu-i	SO ₂ Me	H
	C1	OCH ₂ COOBu-t	SO ₂ Me	H
	C1	OCH ₂ COO-Y4	SO ₂ Me	H
	C1	OCHMeCOOMe	SO ₂ Me	H
30	C1	OCHMeCOOEt	SO ₂ Me	H
	C1	OCHMeCOOPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ CN	SO ₂ Me	H
	C1	OCH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	H
35	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
40	C1	OCOOMe	SO ₂ Me	H
	C1	OCOOPr-i	SO ₂ Me	H
	C1	OCONH ₂	SO ₂ Me	H
	C1	OCONHMe	SO ₂ Me	H
	C1	OCONMe ₂	SO ₂ Me	H
45	C1	OP(O)(OMe) ₂	SO ₂ Me	H
	C1	Y20	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	C1	$\text{SCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	C1	$\text{SCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	C1	$\text{SCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	C1	SCH_2CF_3	SO_2Me	H
10	C1	SCH_2CCl_3	SO_2Me	H
	C1	Y21	SO_2Me	H
	C1	SPh	SO_2Me	H
	C1	$\text{SCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{SCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
15	C1	$\text{SCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	C1	Y22	SO_2Me	H
	C1	$\text{S(O)CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	C1	$\text{S(O)CH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	C1	$\text{S(O)CH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
20	C1	$\text{S(O)CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	C1	Y23	SO_2Me	H
	C1	$\text{SO}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	C1	$\text{SO}_2\text{CH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	C1	$\text{SO}_2\text{CH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
25	C1	$\text{SO}_2\text{CH}_2\text{CF}_3$	SO_2Me	H
	C1	$\text{SO}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	C1	Y24	SO_2Me	H
	C1	Y25	SO_2Me	H
	C1	SO_2Ph	SO_2Me	H
30	C1	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	C1	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	C1	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	C1	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	CH_2Ph
	C1	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	CH_2Ph
35	C1	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	CH_2Ph
	C1	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	CH_2Ph
	C1	$\text{OCH}_2\text{CH}_2\text{SMe}$	SO_2Me	CH_2Ph
	C1	$\text{OCH}_2\text{CH}_2\text{S(O)Me}$	SO_2Me	CH_2Ph
	C1	$\text{OCH}_2\text{CH}_2\text{SO}_2\text{Me}$	SO_2Me	CH_2Ph
40	C1	$\text{OCH}_2\text{CH}_2\text{SPr-i}$	SO_2Me	CH_2Ph
	C1	$\text{OCH}_2\text{CH}_2\text{S(O)Pr-i}$	SO_2Me	CH_2Ph
	C1	$\text{OCH}_2\text{CH}_2\text{SO}_2\text{Pr-i}$	SO_2Me	CH_2Ph
	C1	$\text{SCH}_2\text{CH}_2\text{OMe}$	SO_2Me	CH_2Ph
	C1	$\text{SCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	CH_2Ph
45	C1	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OMe}$	SO_2Me	CH_2Ph

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Table 4 (continued)

	X	Y	Z	Q
5	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
10	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
15	Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OMe	Cl	H
20	Cl	OCH ₂ CH ₂ OE t	Cl	H
	Cl	OCH ₂ CH ₂ OPr-i	Cl	H
	Cl	OCHMeCH ₂ OMe	Cl	H
	Cl	OCH ₂ COOMe	Cl	H
	Cl	OCH ₂ CH ₂ SMe	Cl	H
25	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Cl	SCH ₂ CH ₂ OMe	Cl	H
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
30	Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
35	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
40	OMe	Y1	SO ₂ Me	H
	OMe	Y2	SO ₂ Me	H
	OMe	Y3	SO ₂ Me	H
	OMe	Y4	SO ₂ Me	H
	OMe	Y5	SO ₂ Me	H
45	OMe	Y6	SO ₂ Me	H
	OMe	Y7	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	OMe	$\text{OCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCHMeCH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{CH}=\text{CH}_2$	SO_2Me	H
10	OMe	$\text{OCH}_2\text{CMe}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CHMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
15	OMe	$\text{OCHMeC}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	OMe	OCH_2CHF_2	SO_2Me	H
20	OMe	OCH_2CF_3	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	OCH_2CCl_3	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
25	OMe	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
	OMe	Y8	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
30	OMe	OPh	SO_2Me	H
	OMe	OPh-Me-2	SO_2Me	H
	OMe	OPh-Cl-4	SO_2Me	H
	OMe	OPh-NO ₂ -4	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
35	OMe	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
40	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
45	OMe	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
10	OMe	OCH ₂ Ph	SO ₂ Me	H
	OMe	OCHMePh	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
15	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	OMe	Y9	SO ₂ Me	H
	OMe	Y10	SO ₂ Me	H
	OMe	Y11	SO ₂ Me	H
20	OMe	Y12	SO ₂ Me	H
	OMe	Y13	SO ₂ Me	H
	OMe	Y14	SO ₂ Me	H
	OMe	Y15	SO ₂ Me	H
	OMe	Y16	SO ₂ Me	H
25	OMe	Y17	SO ₂ Me	H
	OMe	Y18	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
30	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	OMe	Y19	SO ₂ Me	H
	OMe	OCH ₂ COOMe	SO ₂ Me	H
	OMe	OCH ₂ COOEt	SO ₂ Me	H
35	OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	OMe	OCHMeCOOMe	SO ₂ Me	H
40	OMe	OCHMeCOOEt	SO ₂ Me	H
	OMe	OCHMeCOOPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	OMe	OCH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
45	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H

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Table 4 (continued)

5	X	Y	Z	Q
	OMe	OCH ₂ CH ₂ SP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)P <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ P <i>r</i> -i	SO ₂ Me	H
10	OMe	OCOOMe	SO ₂ Me	H
	OMe	OCOOP <i>r</i> -i	SO ₂ Me	H
	OMe	OCONH ₂	SO ₂ Me	H
	OMe	OCONHMe	SO ₂ Me	H
	OMe	OCONMe ₂	SO ₂ Me	H
15	OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	OMe	Y20	SO ₂ Me	H
	OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SCH ₂ C≡CH	SO ₂ Me	H
20	OMe	SCH ₂ CF ₃	SO ₂ Me	H
	OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	OMe	Y21	SO ₂ Me	H
	OMe	SPh	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
25	OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	Y22	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
30	OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
	OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y23	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
35	OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y24	SO ₂ Me	H
	OMe	Y25	SO ₂ Me	H
40	OMe	SO ₂ Ph	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
45	OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ Ph

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Table 4 (continued)

	X	Y	Z	Q
6	OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
10	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
15	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
20	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
25	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OMe	Cl	H
30	OMe	OCH ₂ CH ₂ OE t	Cl	H
	OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	OMe	OCHMeCH ₂ OMe	Cl	H
	OMe	OCH ₂ COOMe	Cl	H
	OMe	OCH ₂ CH ₂ SMe	Cl	H
35	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	OMe	SCH ₂ CH ₂ OMe	Cl	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
40	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
45	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh

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Table 4 (continued)

	X	Y	Z	Q
5	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
10	CH ₂ OMe	Y1	SO ₂ Me	H
	CH ₂ OMe	Y2	SO ₂ Me	H
	CH ₂ OMe	Y3	SO ₂ Me	H
	CH ₂ OMe	Y4	SO ₂ Me	H
	CH ₂ OMe	Y5	SO ₂ Me	H
15	CH ₂ OMe	Y6	SO ₂ Me	H
	CH ₂ OMe	Y7	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
25	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
30	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
	CH ₂ OMe	Y8	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
40	CH ₂ OMe	OPh	SO ₂ Me	H
	CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
	CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCHMePh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	CH ₂ OMe	Y9	SO ₂ Me	H
	CH ₂ OMe	Y10	SO ₂ Me	H
	CH ₂ OMe	Y11	SO ₂ Me	H
30	CH ₂ OMe	Y12	SO ₂ Me	H
	CH ₂ OMe	Y13	SO ₂ Me	H
	CH ₂ OMe	Y14	SO ₂ Me	H
	CH ₂ OMe	Y15	SO ₂ Me	H
	CH ₂ OMe	Y16	SO ₂ Me	H
35	CH ₂ OMe	Y17	SO ₂ Me	H
	CH ₂ OMe	Y18	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
40	CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	CH ₂ OMe	Y19	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
10	CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
20	CH ₂ OMe	OCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	CONH ₂	SO ₂ Me	H
	CH ₂ OMe	CONHMe	SO ₂ Me	H
	CH ₂ OMe	CONMe ₂	SO ₂ Me	H
25	CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	CH ₂ OMe	Y20	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
30	CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	Y21	SO ₂ Me	H
	CH ₂ OMe	SPh	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
35	CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	Y22	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
40	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y23	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
45	CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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Table 4 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y24	SO ₂ Me	H
	CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
15	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
20	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
30	CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
35	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
40	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ COOMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
45	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H

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Table 4 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
10	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
15	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

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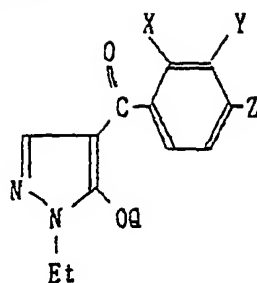
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Table 5



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H

Table 5 (continued)

	X	Y	Z	Q
5	Me	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	Me	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	Me	OPh	SO_2Me	H
10	Me	OPh-Me-2	SO_2Me	H
	Me	OPh-Cl-4	SO_2Me	H
	Me	OPh-NO ₂ -4	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
15	Me	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
20	Me	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	Me	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
25	Me	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
	Me	OCH_2Ph	SO_2Me	H
30	Me	OCHMePh	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	Me	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	Me	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	Me	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
35	Me	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H
	Me	Y9	SO_2Me	H
	Me	Y10	SO_2Me	H
	Me	Y11	SO_2Me	H
	Me	Y12	SO_2Me	H
40	Me	Y13	SO_2Me	H
	Me	Y14	SO_2Me	H
	Me	Y15	SO_2Me	H
	Me	Y16	SO_2Me	H
	Me	Y17	SO_2Me	H
45	Me	Y18	SO_2Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
10	Me	Y19	SO ₂ Me	H
	Me	OCH ₂ COOMe	SO ₂ Me	H
	Me	OCH ₂ COOEt	SO ₂ Me	H
	Me	OCH ₂ COOPr-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-i	SO ₂ Me	H
15	Me	OCH ₂ COOBu-t	SO ₂ Me	H
	Me	OCH ₂ COO-Y4	SO ₂ Me	H
	Me	OCHMeCOOMe	SO ₂ Me	H
	Me	OCHMeCOOEt	SO ₂ Me	H
	Me	OCHMeCOOPr-i	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Me	OCH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	Me	OCOOMe	SO ₂ Me	H
	Me	OCOOPr-i	SO ₂ Me	H
30	Me	OCONH ₂	SO ₂ Me	H
	Me	OCONHMe	SO ₂ Me	H
	Me	OCONMe ₂	SO ₂ Me	H
	Me	OP(O)(OMe) ₂	SO ₂ Me	H
35	Me	Y20	SO ₂ Me	H
	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SCH ₂ C≡CH	SO ₂ Me	H
	Me	SCH ₂ CF ₃	SO ₂ Me	H
40	Me	SCH ₂ CCl ₃	SO ₂ Me	H
	Me	Y21	SO ₂ Me	H
	Me	SPh	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
45	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	Me	Y22	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
10	Me	Y23	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
15	Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y24	SO ₂ Me	H
	Me	Y25	SO ₂ Me	H
	Me	SO ₂ Ph	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
20	Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	Me	OCMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
30	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
35	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
40	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
45	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh

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Table 5 (continued)

	X	Y	Z	Q
5	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OMe	Cl	H
10	Me	OCH ₂ CH ₂ OEt	Cl	H
	Me	OCH ₂ CH ₂ OPr-i	Cl	H
	Me	OCHMeCH ₂ OMe	Cl	H
	Me	OCH ₂ COOMe	Cl	H
	Me	OCH ₂ CH ₂ SMe	Cl	H
15	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Me	SCH ₂ CH ₂ OMe	Cl	H
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
20	Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
25	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
30	Cl	Y1	SO ₂ Me	H
	Cl	Y2	SO ₂ Me	H
	Cl	Y3	SO ₂ Me	H
	Cl	Y4	SO ₂ Me	H
	Cl	Y5	SO ₂ Me	H
35	Cl	Y6	SO ₂ Me	H
	Cl	Y7	SO ₂ Me	H
	Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCHMeCH=CH ₂	SO ₂ Me	H
	Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
40	Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
	Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ C≡CH	SO ₂ Me	H
45	Cl	OCHMeC≡CH	SO ₂ Me	H
	Cl	OCMe ₂ C≡CH	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	Cl	$\text{OCH}_2\text{C} \equiv \text{CMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	Cl	OCH_2CHF_2	SO_2Me	H
10	Cl	OCH_2CF_3	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	OCH_2CCl_3	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
15	Cl	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
	Cl	Y8	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CH}_2$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CHCl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
20	Cl	OPh	SO_2Me	H
	Cl	OPh-Me-2	SO_2Me	H
	Cl	OPh-Cl-4	SO_2Me	H
	Cl	OPh-NO ₂ -4	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
25	Cl	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
30	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
35	Cl	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
40	Cl	OCH_2Ph	SO_2Me	H
	Cl	OCHMePh	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
45	Cl	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	C1	Y9	SO ₂ Me	H
	C1	Y10	SO ₂ Me	H
	C1	Y11	SO ₂ Me	H
	C1	Y12	SO ₂ Me	H
	C1	Y13	SO ₂ Me	H
10	C1	Y14	SO ₂ Me	H
	C1	Y15	SO ₂ Me	H
	C1	Y16	SO ₂ Me	H
	C1	Y17	SO ₂ Me	H
	C1	Y18	SO ₂ Me	H
15	C1	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
20	C1	Y19	SO ₂ Me	H
	C1	OCH ₂ COOMe	SO ₂ Me	H
	C1	OCH ₂ COOEt	SO ₂ Me	H
	C1	OCH ₂ COOPr-i	SO ₂ Me	H
25	C1	OCH ₂ COOBu-i	SO ₂ Me	H
	C1	OCH ₂ COOBu-t	SO ₂ Me	H
	C1	OCH ₂ COO-Y4	SO ₂ Me	H
	C1	OCHMeCOOMe	SO ₂ Me	H
	C1	OCHMeCOOEt	SO ₂ Me	H
	C1	OCHMeCOOPr-i	SO ₂ Me	H
30	C1	OCH ₂ CH ₂ CN	SO ₂ Me	H
	C1	OCH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
35	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	C1	OCOOMe	SO ₂ Me	H
40	C1	OCOOPr-i	SO ₂ Me	H
	C1	OCONH ₂	SO ₂ Me	H
	C1	OCONHMe	SO ₂ Me	H
	C1	OCONMe ₂	SO ₂ Me	H
	C1	OP(O)(OMe) ₂	SO ₂ Me	H
45	C1	Y20	SO ₂ Me	H

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Table 5 (continued)

	Y	Z	Q
5	SCH ₂ CH=CH ₂	SO ₂ Me	H
	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	SCH ₂ C≡CH	SO ₂ Me	H
	SCH ₂ CF ₃	SO ₂ Me	H
10	SCH ₂ CCl ₃	SO ₂ Me	H
	Y21	SO ₂ Me	H
	SPh	SO ₂ Me	H
	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	SCH ₂ CH ₂ OEt	SO ₂ Me	H
15	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Y22	SO ₂ Me	H
	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	S(O)CH ₂ C≡CH	SO ₂ Me	H
20	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	Y23	SO ₂ Me	H
	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
25	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Y24	SO ₂ Me	H
	Y25	SO ₂ Me	H
	SO ₂ Ph	SO ₂ Me	H
30	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
35	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
40	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
45	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph

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Table 5 (continued)

	X	Y	Z	Q
5	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
10	Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SPR-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
15	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OEt	Cl	H
20	Cl	OCH ₂ CH ₂ OPr-i	Cl	H
	Cl	OCHMeCH ₂ OMe	Cl	H
	Cl	OCH ₂ COOMe	Cl	H
	Cl	OCH ₂ CH ₂ SMe	Cl	H
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
25	Cl	SCH ₂ CH ₂ OMe	Cl	H
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
30	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
35	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
40	OMe	Y1	SO ₂ Me	H
	OMe	Y2	SO ₂ Me	H
	OMe	Y3	SO ₂ Me	H
	OMe	Y4	SO ₂ Me	H
	OMe	Y5	SO ₂ Me	H
45	OMe	Y6	SO ₂ Me	H
	OMe	Y7	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	OMe	$\text{OCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCHMeCH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CMe}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CHMe}$	SO_2Me	H
10	OMe	$\text{OCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCHMeC}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{C}\equiv\text{CH}$	SO_2Me	H
15	OMe	$\text{OCH}_2\text{C}\equiv\text{CMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	OMe	OCH_2CHF_2	SO_2Me	H
	OMe	OCH_2CF_3	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
20	OMe	OCH_2CCl_3	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
	OMe	Y8	SO_2Me	H
25	OMe	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	OMe	OPh	SO_2Me	H
	OMe	OPh-Me-2	SO_2Me	H
30	OMe	OPh-Cl-4	SO_2Me	H
	OMe	OPh-NO ₂ -4	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
35	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
40	OMe	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
45	OMe	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
10	OMe	OCH ₂ Ph	SO ₂ Me	H
	OMe	OCHMePh	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
15	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	OMe	Y9	SO ₂ Me	H
	OMe	Y10	SO ₂ Me	H
	OMe	Y11	SO ₂ Me	H
20	OMe	Y12	SO ₂ Me	H
	OMe	Y13	SO ₂ Me	H
	OMe	Y14	SO ₂ Me	H
	OMe	Y15	SO ₂ Me	H
	OMe	Y16	SO ₂ Me	H
25	OMe	Y17	SO ₂ Me	H
	OMe	Y18	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
30	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	OMe	Y19	SO ₂ Me	H
	OMe	OCH ₂ COOMe	SO ₂ Me	H
	OMe	OCH ₂ COOEt	SO ₂ Me	H
35	OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	OMe	OCHMeCOOMe	SO ₂ Me	H
40	OMe	OCHMeCOOEt	SO ₂ Me	H
	OMe	OCHMeCOOPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	OMe	OCH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
45	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	OMe	OCOOMe	SO ₂ Me	H
	OMe	OCOOPr-i	SO ₂ Me	H
10	OMe	OCONH ₂	SO ₂ Me	H
	OMe	OCONHMe	SO ₂ Me	H
	OMe	OCONMe ₂	SO ₂ Me	H
	OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	OMe	Y20	SO ₂ Me	H
15	OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SCH ₂ C≡CH	SO ₂ Me	H
	OMe	SCH ₂ CF ₃	SO ₂ Me	H
	OMe	SCH ₂ CCl ₃	SO ₂ Me	H
20	OMe	Y21	SO ₂ Me	H
	OMe	SPh	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
25	OMe	Y22	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
	OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
30	OMe	Y23	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
35	OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y24	SO ₂ Me	H
	OMe	Y25	SO ₂ Me	H
	OMe	SO ₂ Ph	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
40	OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
45	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph

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Table 5 (continued)

	X	Y	Z	Q
5	OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
10	OMe	OCH ₂ CH ₂ SPR-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)PR-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ PR-i	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ Ph
15	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
20	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SPR-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ PR-i	SO ₂ Me	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
25	OMe	SCH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OE t	Cl	H
30	OMe	OCH ₂ CH ₂ OPR-i	Cl	H
	OMe	OCHMeCH ₂ OMe	Cl	H
	OMe	OCH ₂ COOMe	Cl	H
	OMe	OCH ₂ CH ₂ SMe	Cl	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
35	OMe	SCH ₂ CH ₂ OMe	Cl	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
40	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
45	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh

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Table 5 (continued)

	X	Y	Z	Q
5	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	Y1	SO ₂ Me	H
	CH ₂ OMe	Y2	SO ₂ Me	H
10	CH ₂ OMe	Y3	SO ₂ Me	H
	CH ₂ OMe	Y4	SO ₂ Me	H
	CH ₂ OMe	Y5	SO ₂ Me	H
	CH ₂ OMe	Y6	SO ₂ Me	H
	CH ₂ OMe	Y7	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
30	CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
	CH ₂ OMe	Y8	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
	CH ₂ OMe	OPh	SO ₂ Me	H
	CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
40	CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCHMePh	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
25	CH ₂ OMe	Y9	SO ₂ Me	H
	CH ₂ OMe	Y10	SO ₂ Me	H
	CH ₂ OMe	Y11	SO ₂ Me	H
	CH ₂ OMe	Y12	SO ₂ Me	H
	CH ₂ OMe	Y13	SO ₂ Me	H
30	CH ₂ OMe	Y14	SO ₂ Me	H
	CH ₂ OMe	Y15	SO ₂ Me	H
	CH ₂ OMe	Y16	SO ₂ Me	H
	CH ₂ OMe	Y17	SO ₂ Me	H
	CH ₂ OMe	Y18	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
40	CH ₂ OMe	Y19	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
10	CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SPR-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
20	CH ₂ OMe	OCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCONH ₂	SO ₂ Me	H
	CH ₂ OMe	OCONHMe	SO ₂ Me	H
	CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
25	CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	CH ₂ OMe	Y20	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
30	CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	Y21	SO ₂ Me	H
	CH ₂ OMe	SPh	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
35	CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	Y22	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
40	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y23	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
45	CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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Table 5 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y24	SO ₂ Me	H
	CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
15	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
20	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
30	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
35	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
40	CH ₂ OMe	OCH ₂ COOMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
45	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H

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Table 5 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
15	CH ₂ OMe	SCH ₂ CH ₂ OE _t	Cl	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

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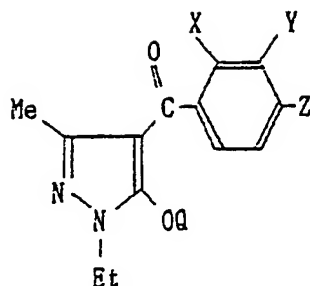
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Table 6



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H

Table 6 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CCl =CH ₂	SO ₂ Me	H
	Me	OCH ₂ CCl =CHCl	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
	Me	OPh	SO ₂ Me	H
10	Me	OPh-Me-2	SO ₂ Me	H
	Me	OPh-Cl-4	SO ₂ Me	H
	Me	OPh-NO ₂ -4	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
15	Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	Me	OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CHMeOMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
	Me	OCH ₂ Ph	SO ₂ Me	H
30	Me	OCHMePh	SO ₂ Me	H
	Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
	Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
35	Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	Me	Y9	SO ₂ Me	H
	Me	Y10	SO ₂ Me	H
	Me	Y11	SO ₂ Me	H
	Me	Y12	SO ₂ Me	H
40	Me	Y13	SO ₂ Me	H
	Me	Y14	SO ₂ Me	H
	Me	Y15	SO ₂ Me	H
	Me	Y16	SO ₂ Me	H
	Me	Y17	SO ₂ Me	H
45	Me	Y18	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
10	Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	Me	Y19	SO ₂ Me	H
	Me	OCH ₂ COOMe	SO ₂ Me	H
	Me	OCH ₂ COOEt	SO ₂ Me	H
	Me	OCH ₂ COOPr-i	SO ₂ Me	H
15	Me	OCH ₂ COOBu-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-t	SO ₂ Me	H
	Me	OCH ₂ COO-Y4	SO ₂ Me	H
	Me	OCHMeCOOMe	SO ₂ Me	H
	Me	OCHMeCOOEt	SO ₂ Me	H
20	Me	OCHMeCOOPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Me	OCH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
30	Me	OCOOMe	SO ₂ Me	H
	Me	OCOOPr-i	SO ₂ Me	H
	Me	CONH ₂	SO ₂ Me	H
	Me	CONHMe	SO ₂ Me	H
	Me	CONMe ₂	SO ₂ Me	H
35	Me	OP(O)(OMe) ₂	SO ₂ Me	H
	Me	Y20	SO ₂ Me	H
	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SCH ₂ C≡CH	SO ₂ Me	H
40	Me	SCH ₂ CF ₃	SO ₂ Me	H
	Me	SCH ₂ CCl ₃	SO ₂ Me	H
	Me	Y21	SO ₂ Me	H
	Me	SPh	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
45	Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	Me	Y22	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
10	Me	Y23	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
15	Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y24	SO ₂ Me	H
	Me	Y25	SO ₂ Me	H
	Me	SO ₂ Ph	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
20	Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
30	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
35	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
40	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
45	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh

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Table 6 (continued)

	X	Y	Z	Q
5	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OEt	Cl	H
10	Me	OCH ₂ CH ₂ OPr-i	Cl	H
	Me	OCHMeCH ₂ OMe	Cl	H
	Me	OCH ₂ COOMe	Cl	H
	Me	OCH ₂ CH ₂ SMe	Cl	H
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
15	Me	SCH ₂ CH ₂ OMe	Cl	H
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
20	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
25	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
30	Cl	Y1	SO ₂ Me	H
	Cl	Y2	SO ₂ Me	H
	Cl	Y3	SO ₂ Me	H
	Cl	Y4	SO ₂ Me	H
	Cl	Y5	SO ₂ Me	H
	Cl	Y6	SO ₂ Me	H
35	Cl	Y7	SO ₂ Me	H
	Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCHMeCH=CH ₂	SO ₂ Me	H
	Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
40	Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
	Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ C≡CH	SO ₂ Me	H
	Cl	OCHMeC≡CH	SO ₂ Me	H
45	Cl	OCMe ₂ C≡CH	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	Cl	$\text{OCH}_2\text{C} \equiv \text{CMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	Cl	OCH_2CHF_2	SO_2Me	H
	Cl	OCH_2CF_3	SO_2Me	H
10	Cl	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	OCH_2CCl_3	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
15	Cl	Y8	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CH}_2$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CHCl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	Cl	OPh	SO_2Me	H
20	Cl	OPh-Me-2	SO_2Me	H
	Cl	OPh-Cl-4	SO_2Me	H
	Cl	OPh-NO ₂ -4	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
25	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
30	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
35	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
	Cl	OCH_2Ph	SO_2Me	H
40	Cl	OCHMePh	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
45	Cl	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	C1	Y9	SO ₂ Me	H
	C1	Y10	SO ₂ Me	H
	C1	Y11	SO ₂ Me	H
	C1	Y12	SO ₂ Me	H
10	C1	Y13	SO ₂ Me	H
	C1	Y14	SO ₂ Me	H
	C1	Y15	SO ₂ Me	H
	C1	Y16	SO ₂ Me	H
	C1	Y17	SO ₂ Me	H
15	C1	Y18	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
20	C1	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	C1	Y19	SO ₂ Me	H
	C1	OCH ₂ COOMe	SO ₂ Me	H
	C1	OCH ₂ COOEt	SO ₂ Me	H
	C1	OCH ₂ COOPr-i	SO ₂ Me	H
25	C1	OCH ₂ COOBu-i	SO ₂ Me	H
	C1	OCH ₂ COOBu-t	SO ₂ Me	H
	C1	OCH ₂ COO-Y4	SO ₂ Me	H
	C1	OCHMeCOOMe	SO ₂ Me	H
	C1	OCHMeCOOEt	SO ₂ Me	H
30	C1	OCHMeCOOPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ CN	SO ₂ Me	H
	C1	OCH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
35	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	C1	OCOOMe	SO ₂ Me	H
40	C1	OCOOPr-i	SO ₂ Me	H
	C1	OCONH ₂	SO ₂ Me	H
	C1	OCONHMe	SO ₂ Me	H
	C1	OCONMe ₂	SO ₂ Me	H
	C1	OP(O)(OMe) ₂	SO ₂ Me	H
45	C1	Y20	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	Cl	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	SCH ₂ C≡CH	SO ₂ Me	H
	Cl	SCH ₂ CF ₃	SO ₂ Me	H
	Cl	SCH ₂ CCl ₃	SO ₂ Me	H
10	Cl	Y21	SO ₂ Me	H
	Cl	SPh	SO ₂ Me	H
	Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	Cl	SCH ₂ CH ₂ OE t	SO ₂ Me	H
	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
15	Cl	Y22	SO ₂ Me	H
	Cl	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Cl	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
20	Cl	Y23	SO ₂ Me	H
	Cl	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Cl	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
25	Cl	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Cl	Y24	SO ₂ Me	H
	Cl	Y25	SO ₂ Me	H
	Cl	SO ₂ Ph	SO ₂ Me	H
30	Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	Cl	SO ₂ CH ₂ CH ₂ OE t	SO ₂ Me	H
	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OE t	SO ₂ Me	CH ₂ Ph
35	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
40	Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
45	Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph

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Table 6 (continued)

	X	Y	Z	Q
5	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
10	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
15	Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OEt	Cl	H
	Cl	OCH ₂ CH ₂ OPr-i	Cl	H
20	Cl	OCHMeCH ₂ OMe	Cl	H
	Cl	OCH ₂ COOMe	Cl	H
	Cl	OCH ₂ CH ₂ SMe	Cl	H
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Cl	SCH ₂ CH ₂ OMe	Cl	H
25	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
30	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
35	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	Y1	SO ₂ Me	H
40	OMe	Y2	SO ₂ Me	H
	OMe	Y3	SO ₂ Me	H
	OMe	Y4	SO ₂ Me	H
	OMe	Y5	SO ₂ Me	H
	OMe	Y6	SO ₂ Me	H
45	OMe	Y7	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	OMe	$\text{OCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCHMeCH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CMe}=\text{CH}_2$	SO_2Me	H
10	OMe	$\text{OCH}_2\text{CH}=\text{CHMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCHMeC}\equiv\text{CH}$	SO_2Me	H
15	OMe	$\text{OCMe}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	OMe	OCH_2CHF_2	SO_2Me	H
	OMe	OCH_2CF_3	SO_2Me	H
20	OMe	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	OCH_2CCl_3	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
25	OMe	Y8	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	OMe	OPh	SO_2Me	H
30	OMe	OPh-Me-2	SO_2Me	H
	OMe	OPh-Cl-4	SO_2Me	H
	OMe	OPh-NO ₂ -4	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
35	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
40	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
45	OMe	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
10	OMe	OCH ₂ Ph	SO ₂ Me	H
	OMe	OCHMePh	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
15	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	OMe	Y9	SO ₂ Me	H
	OMe	Y10	SO ₂ Me	H
	OMe	Y11	SO ₂ Me	H
20	OMe	Y12	SO ₂ Me	H
	OMe	Y13	SO ₂ Me	H
	OMe	Y14	SO ₂ Me	H
	OMe	Y15	SO ₂ Me	H
	OMe	Y16	SO ₂ Me	H
25	OMe	Y17	SO ₂ Me	H
	OMe	Y18	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
30	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	OMe	Y19	SO ₂ Me	H
	OMe	OCH ₂ COOMe	SO ₂ Me	H
	OMe	OCH ₂ COOEt	SO ₂ Me	H
35	OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	OMe	OCHMeCOOMe	SO ₂ Me	H
40	OMe	OCHMeCOOEt	SO ₂ Me	H
	OMe	OCHMeCOOPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	OMe	OCH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
45	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ SP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)P <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ P <i>r</i> -i	SO ₂ Me	H
	OMe	OCOOMe	SO ₂ Me	H
10	OMe	OCOOP <i>r</i> -i	SO ₂ Me	H
	OMe	OCONH ₂	SO ₂ Me	H
	OMe	OCONHMe	SO ₂ Me	H
	OMe	OCONMe ₂	SO ₂ Me	H
	OMe	OP(O)(OMe) ₂	SO ₂ Me	H
15	OMe	Y20	SO ₂ Me	H
	OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SCH ₂ C≡CH	SO ₂ Me	H
	OMe	SCH ₂ CF ₃	SO ₂ Me	H
20	OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	OMe	Y21	SO ₂ Me	H
	OMe	SPh	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OE <i>t</i>	SO ₂ Me	H
25	OMe	SCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	Y22	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
30	OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y23	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
35	OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y24	SO ₂ Me	H
	OMe	Y25	SO ₂ Me	H
	OMe	SO ₂ Ph	SO ₂ Me	H
40	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OE <i>t</i>	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
45	OMe	OCH ₂ CH ₂ OE <i>t</i>	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ Ph

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Table 6 (continued)

	X	Y	Z	Q
5	OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
10	OMe	OCH ₂ CH ₂ SPR-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)PR-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ PR-i	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ Ph
15	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ COPh
20	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SPR-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ PR-i	SO ₂ Me	CH ₂ COPh
25	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OPR-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OMe	Cl	H
30	OMe	OCH ₂ CH ₂ OEt	Cl	H
	OMe	OCH ₂ CH ₂ OPR-i	Cl	H
	OMe	OCHMeCH ₂ OMe	Cl	H
	OMe	OCH ₂ COOMe	Cl	H
	OMe	OCH ₂ CH ₂ SMe	Cl	H
35	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	OMe	SCH ₂ CH ₂ OMe	Cl	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
40	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
45	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh

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Table 6 (continued)

	X	Y	Z	Q
5	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
10	CH ₂ OMe	Y1	SO ₂ Me	H
	CH ₂ OMe	Y2	SO ₂ Me	H
	CH ₂ OMe	Y3	SO ₂ Me	H
	CH ₂ OMe	Y4	SO ₂ Me	H
	CH ₂ OMe	Y5	SO ₂ Me	H
15	CH ₂ OMe	Y6	SO ₂ Me	H
	CH ₂ OMe	Y7	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
25	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
30	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
	CH ₂ OMe	Y8	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
40	CH ₂ OMe	OPh	SO ₂ Me	H
	CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
	CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
20	CH ₂ OMe	OCHMePh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	CH ₂ OMe	Y9	SO ₂ Me	H
	CH ₂ OMe	Y10	SO ₂ Me	H
	CH ₂ OMe	Y11	SO ₂ Me	H
	CH ₂ OMe	Y12	SO ₂ Me	H
30	CH ₂ OMe	Y13	SO ₂ Me	H
	CH ₂ OMe	Y14	SO ₂ Me	H
	CH ₂ OMe	Y15	SO ₂ Me	H
	CH ₂ OMe	Y16	SO ₂ Me	H
	CH ₂ OMe	Y17	SO ₂ Me	H
35	CH ₂ OMe	Y18	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
40	CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	CH ₂ OMe	Y19	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ SPR-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
20	CH ₂ OMe	OCONH ₂	SO ₂ Me	H
	CH ₂ OMe	OCONHMe	SO ₂ Me	H
	CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
	CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
25	CH ₂ OMe	Y20	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
30	CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	Y21	SO ₂ Me	H
	CH ₂ OMe	SPh	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
35	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	Y22	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
40	CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y23	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
45	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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Table 6 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y24	SO ₂ Me	H
	CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
15	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
20	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
30	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
35	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
40	CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ COOMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
45	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H

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Table 6 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
15	CH ₂ OMe	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

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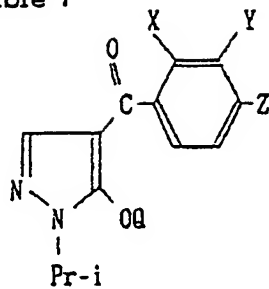
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Table 7



	X	Y	Z	Q
	Me	Y1	SO ₂ Me	H
	Me	Y2	SO ₂ Me	H
	Me	Y3	SO ₂ Me	H
20	Me	Y4	SO ₂ Me	H
	Me	Y5	SO ₂ Me	H
	Me	Y6	SO ₂ Me	H
	Me	Y7	SO ₂ Me	H
	Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
25	Me	OCHMeCH=CH ₂	SO ₂ Me	H
	Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	Me	OCH ₂ CH=CHMe	SO ₂ Me	H
	Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
30	Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	OCH ₂ C≡CH	SO ₂ Me	H
	Me	OCHMeC≡CH	SO ₂ Me	H
	Me	OCMe ₂ C≡CH	SO ₂ Me	H
	Me	OCH ₂ C≡CMe	SO ₂ Me	H
35	Me	OCH ₂ CH ₂ F	SO ₂ Me	H
	Me	OCH ₂ CHF ₂	SO ₂ Me	H
	Me	OCH ₂ CF ₃	SO ₂ Me	H
	Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
40	Me	OCH ₂ CCl ₃	SO ₂ Me	H
	Me	OCHMeCH ₂ Cl	SO ₂ Me	H
	Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
	Me	Y8	SO ₂ Me	H

Table 7 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CCl =CH ₂	SO ₂ Me	H
	Me	OCH ₂ CCl =CHCl	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
	Me	OPh	SO ₂ Me	H
	Me	OPh-Me-2	SO ₂ Me	H
10	Me	OPh-Cl-4	SO ₂ Me	H
	Me	OPh-NO ₂ -4	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H
15	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	Me	OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CHMeOMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OH	SO ₂ Me	H
	Me	OCH ₂ Ph	SO ₂ Me	H
	Me	OCHMePh	SO ₂ Me	H
30	Me	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	Me	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	Me	OCH ₂ Ph-3-Me	SO ₂ Me	H
	Me	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	Me	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
35	Me	Y9	SO ₂ Me	H
	Me	Y10	SO ₂ Me	H
	Me	Y11	SO ₂ Me	H
	Me	Y12	SO ₂ Me	H
	Me	Y13	SO ₂ Me	H
40	Me	Y14	SO ₂ Me	H
	Me	Y15	SO ₂ Me	H
	Me	Y16	SO ₂ Me	H
	Me	Y17	SO ₂ Me	H
45	Me	Y18	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
10	Me	Y19	SO ₂ Me	H
	Me	OCH ₂ COOMe	SO ₂ Me	H
	Me	OCH ₂ COOEt	SO ₂ Me	H
	Me	OCH ₂ COOPr-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-i	SO ₂ Me	H
15	Me	OCH ₂ COOBu-t	SO ₂ Me	H
	Me	OCH ₂ COO-Y4	SO ₂ Me	H
	Me	OCHMeCOOMe	SO ₂ Me	H
	Me	OCHMeCOOEt	SO ₂ Me	H
	Me	OCHMeCOOPr-i	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Me	OCH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	Me	OCOOMe	SO ₂ Me	H
30	Me	OCOOPr-i	SO ₂ Me	H
	Me	OCNH ₂	SO ₂ Me	H
	Me	OCNHMe	SO ₂ Me	H
	Me	OCNMe ₂	SO ₂ Me	H
	Me	OP(O)(OMe) ₂	SO ₂ Me	H
35	Me	Y20	SO ₂ Me	H
	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SCH ₂ C≡CH	SO ₂ Me	H
	Me	SCH ₂ CF ₃	SO ₂ Me	H
40	Me	SCH ₂ CCl ₃	SO ₂ Me	H
	Me	Y21	SO ₂ Me	H
	Me	SPh	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
45	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	Me	Y22	SO ₂ Me	H
	Me	S(O)CH ₂ CH = CH ₂	SO ₂ Me	H
	Me	S(O)CH ₂ CH = CMe ₂	SO ₂ Me	H
	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
10	Me	Y23	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH = CH ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH = CMe ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
15	Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y24	SO ₂ Me	H
	Me	Y25	SO ₂ Me	H
	Me	SO ₂ Ph	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
20	Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
30	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
35	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
40	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
45	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh

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Table 7 (continued)

	X	Y	Z	Q
5	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OEt	Cl	H
	Me	OCH ₂ CH ₂ OPr-i	Cl	H
10	Me	OCHMeCH ₂ OMe	Cl	H
	Me	OCH ₂ COOMe	Cl	H
	Me	OCH ₂ CH ₂ SMe	Cl	H
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Me	SCH ₂ CH ₂ OMe	Cl	H
15	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
20	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
25	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	Y1	SO ₂ Me	H
30	Cl	Y2	SO ₂ Me	H
	Cl	Y3	SO ₂ Me	H
	Cl	Y4	SO ₂ Me	H
	Cl	Y5	SO ₂ Me	H
	Cl	Y6	SO ₂ Me	H
	Cl	Y7	SO ₂ Me	H
35	Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCHMeCH=CH ₂	SO ₂ Me	H
	Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
40	Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ C≡CH	SO ₂ Me	H
	Cl	OCHMeC≡CH	SO ₂ Me	H
45	Cl	OCMe ₂ C≡CH	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	Cl	$\text{OCH}_2\text{C} \equiv \text{CMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	Cl	OCH_2CHF_2	SO_2Me	H
	Cl	OCH_2CF_3	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
10	Cl	OCH_2CCl_3	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
	Cl	Y8	SO_2Me	H
15	Cl	$\text{OCH}_2\text{CCl} = \text{CH}_2$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CHCl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	Cl	OPh	SO_2Me	H
	Cl	OPh-Me-2	SO_2Me	H
20	Cl	OPh-Cl-4	SO_2Me	H
	Cl	OPh-NO ₂ -4	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
25	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
30	Cl	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
35	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
	Cl	OCH_2Ph	SO_2Me	H
	Cl	OCHMePh	SO_2Me	H
40	Cl	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
45	Cl	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	C1	Y9	SO ₂ Me	H
	C1	Y10	SO ₂ Me	H
	C1	Y11	SO ₂ Me	H
	C1	Y12	SO ₂ Me	H
	C1	Y13	SO ₂ Me	H
10	C1	Y14	SO ₂ Me	H
	C1	Y15	SO ₂ Me	H
	C1	Y16	SO ₂ Me	H
	C1	Y17	SO ₂ Me	H
	C1	Y18	SO ₂ Me	H
15	C1	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	C1	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
20	C1	Y19	SO ₂ Me	H
	C1	OCH ₂ COOMe	SO ₂ Me	H
	C1	OCH ₂ COOEt	SO ₂ Me	H
	C1	OCH ₂ COOPr-i	SO ₂ Me	H
	C1	OCH ₂ COOBu-i	SO ₂ Me	H
25	C1	OCH ₂ COOBu-t	SO ₂ Me	H
	C1	OCH ₂ COO-Y4	SO ₂ Me	H
	C1	OCHMeCOOMe	SO ₂ Me	H
	C1	OCHMeCOOEt	SO ₂ Me	H
	C1	OCHMeCOOPr-i	SO ₂ Me	H
30	C1	OCH ₂ CH ₂ CN	SO ₂ Me	H
	C1	OCH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
35	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	C1	OCOOMe	SO ₂ Me	H
	C1	OCOOPr-i	SO ₂ Me	H
40	C1	CONH ₂	SO ₂ Me	H
	C1	CONHMe	SO ₂ Me	H
	C1	CONMe ₂	SO ₂ Me	H
	C1	OP(O)(OMe) ₂	SO ₂ Me	H
45	C1	Y20	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	Cl	$\text{SCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	Cl	$\text{SCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	Cl	$\text{SCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	Cl	SCH_2CF_3	SO_2Me	H
	Cl	SCH_2CCl_3	SO_2Me	H
10	Cl	Y21	SO_2Me	H
	Cl	SPh	SO_2Me	H
	Cl	$\text{SCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{SCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	Cl	$\text{SCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
15	Cl	Y22	SO_2Me	H
	Cl	$\text{S(O)CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	Cl	$\text{S(O)CH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	Cl	$\text{S(O)CH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	Cl	$\text{S(O)CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
20	Cl	Y23	SO_2Me	H
	Cl	$\text{SO}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	Cl	$\text{SO}_2\text{CH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	Cl	$\text{SO}_2\text{CH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	Cl	$\text{SO}_2\text{CH}_2\text{CF}_3$	SO_2Me	H
25	Cl	$\text{SO}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	Y24	SO_2Me	H
	Cl	Y25	SO_2Me	H
	Cl	SO_2Ph	SO_2Me	H
	Cl	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
30	Cl	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
	Cl	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	CH_2Ph
35	Cl	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{SMe}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{S(O)Me}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{SO}_2\text{Me}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{SPr-i}$	SO_2Me	CH_2Ph
40	Cl	$\text{OCH}_2\text{CH}_2\text{S(O)Pr-i}$	SO_2Me	CH_2Ph
	Cl	$\text{OCH}_2\text{CH}_2\text{SO}_2\text{Pr-i}$	SO_2Me	CH_2Ph
	Cl	$\text{SCH}_2\text{CH}_2\text{OMe}$	SO_2Me	CH_2Ph
	Cl	$\text{SCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	CH_2Ph
45	Cl	$\text{SO}_2\text{CH}_2\text{CH}_2\text{OMe}$	SO_2Me	CH_2Ph

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Table 7 (continued)

	X	Y	Z	Q
5	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
10	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
15	Cl	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Cl	OCH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OE t	Cl	H
	Cl	OCH ₂ CH ₂ OPr-i	Cl	H
20	Cl	OCHMeCH ₂ OMe	Cl	H
	Cl	OCH ₂ COOMe	Cl	H
	Cl	OCH ₂ CH ₂ SMe	Cl	H
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Cl	SCH ₂ CH ₂ OMe	Cl	H
25	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
30	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Cl	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Cl	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
35	Cl	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	Cl	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	Y1	SO ₂ Me	H
40	OMe	Y2	SO ₂ Me	H
	OMe	Y3	SO ₂ Me	H
	OMe	Y4	SO ₂ Me	H
	OMe	Y5	SO ₂ Me	H
	OMe	Y6	SO ₂ Me	H
45	OMe	Y7	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	OMe	$\text{OCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCHMeCH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CMe}=\text{CH}_2$	SO_2Me	H
10	OMe	$\text{OCH}_2\text{CH}=\text{CHMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCHMeC}\equiv\text{CH}$	SO_2Me	H
15	OMe	$\text{OCMe}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	OMe	OCH_2CHF_2	SO_2Me	H
	OMe	OCH_2CF_3	SO_2Me	H
20	OMe	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	OCH_2CCl_3	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
25	OMe	Y8	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	OMe	OPh	SO_2Me	H
30	OMe	OPh-Me-2	SO_2Me	H
	OMe	OPh-Cl-4	SO_2Me	H
	OMe	OPh-NO ₂ -4	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
35	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
40	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
45	OMe	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
10	OMe	OCH ₂ Ph	SO ₂ Me	H
	OMe	OCHMePh	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
15	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	OMe	Y9	SO ₂ Me	H
	OMe	Y10	SO ₂ Me	H
	OMe	Y11	SO ₂ Me	H
20	OMe	Y12	SO ₂ Me	H
	OMe	Y13	SO ₂ Me	H
	OMe	Y14	SO ₂ Me	H
	OMe	Y15	SO ₂ Me	H
	OMe	Y16	SO ₂ Me	H
25	OMe	Y17	SO ₂ Me	H
	OMe	Y18	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
30	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	OMe	Y19	SO ₂ Me	H
	OMe	OCH ₂ COOMe	SO ₂ Me	H
	OMe	OCH ₂ COOEt	SO ₂ Me	H
35	OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	OMe	OCHMeCOOMe	SO ₂ Me	H
40	OMe	OCHMeCOOEt	SO ₂ Me	H
	OMe	OCHMeCOOPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	OMe	OCH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
45	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ SP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	OMe	OCOOMe	SO ₂ Me	H
10	OMe	OCOOP <i>r</i> -i	SO ₂ Me	H
	OMe	OCONH ₂	SO ₂ Me	H
	OMe	OCONHMe	SO ₂ Me	H
	OMe	OCONMe ₂	SO ₂ Me	H
	OMe	OP(O)(OMe) ₂	SO ₂ Me	H
15	OMe	Y20	SO ₂ Me	H
	OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SCH ₂ C≡CH	SO ₂ Me	H
	OMe	SCH ₂ CF ₃	SO ₂ Me	H
20	OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	OMe	Y21	SO ₂ Me	H
	OMe	SPh	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
25	OMe	SCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	Y22	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
30	OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y23	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
35	OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y24	SO ₂ Me	H
	OMe	Y25	SO ₂ Me	H
	OMe	SO ₂ Ph	SO ₂ Me	H
40	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
45	OMe	OCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ Ph

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Table 7 (continued)

	X	Y	Z	Q
5	OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
10	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
15	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
20	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
25	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OEt	Cl	H
30	OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	OMe	OCHMeCH ₂ OMe	Cl	H
	OMe	OCH ₂ COOMe	Cl	H
	OMe	OCH ₂ CH ₂ SMe	Cl	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
35	OMe	SCH ₂ CH ₂ OMe	Cl	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
40	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
45	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh

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Table 7 (continued)

	X	Y	Z	Q
5	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	Y1	SO ₂ Me	H
	CH ₂ OMe	Y2	SO ₂ Me	H
10	CH ₂ OMe	Y3	SO ₂ Me	H
	CH ₂ OMe	Y4	SO ₂ Me	H
	CH ₂ OMe	Y5	SO ₂ Me	H
	CH ₂ OMe	Y6	SO ₂ Me	H
	CH ₂ OMe	Y7	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
30	CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
	CH ₂ OMe	Y8	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
	CH ₂ OMe	OPh	SO ₂ Me	H
	CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
40	CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCHMePh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	CH ₂ OMe	Y9	SO ₂ Me	H
	CH ₂ OMe	Y10	SO ₂ Me	H
	CH ₂ OMe	Y11	SO ₂ Me	H
30	CH ₂ OMe	Y12	SO ₂ Me	H
	CH ₂ OMe	Y13	SO ₂ Me	H
	CH ₂ OMe	Y14	SO ₂ Me	H
	CH ₂ OMe	Y15	SO ₂ Me	H
	CH ₂ OMe	Y16	SO ₂ Me	H
35	CH ₂ OMe	Y17	SO ₂ Me	H
	CH ₂ OMe	Y18	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
40	CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	CH ₂ OMe	Y19	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOE _t	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
10	CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCOOMe	SO ₂ Me	H
20	CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCONH ₂	SO ₂ Me	H
	CH ₂ OMe	OCONHMe	SO ₂ Me	H
	CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
25	CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
	CH ₂ OMe	Y20	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
30	CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	Y21	SO ₂ Me	H
	CH ₂ OMe	SPh	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
35	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	Y22	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
40	CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y23	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
45	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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Table 7 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y24	SO ₂ Me	H
	CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
15	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
20	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
30	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
35	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
40	CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ COOMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
45	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H

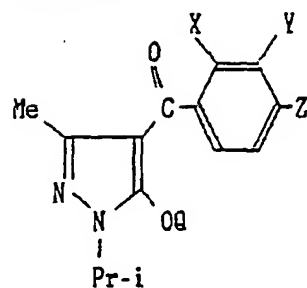
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Table 7 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
10	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
15	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
20				
25				
30				
35				
40				
45				
50				
55				

Table 8



X	Y	Z	Q
Me	Y1	SO ₂ Me	H
Me	Y2	SO ₂ Me	H
Me	Y3	SO ₂ Me	H
Me	Y4	SO ₂ Me	H
Me	Y5	SO ₂ Me	H
Me	Y6	SO ₂ Me	H
Me	Y7	SO ₂ Me	H
Me	OCH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCHMeCH=CH ₂	SO ₂ Me	H
Me	OCMe ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ CMe=CH ₂	SO ₂ Me	H
Me	OCH ₂ CH=CHMe	SO ₂ Me	H
Me	OCH ₂ CH=CMe ₂	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
Me	OCH ₂ C≡CH	SO ₂ Me	H
Me	OCHMeC≡CH	SO ₂ Me	H
Me	OCMe ₂ C≡CH	SO ₂ Me	H
Me	OCH ₂ C≡CMe	SO ₂ Me	H
Me	OCH ₂ CH ₂ F	SO ₂ Me	H
Me	OCH ₂ CHF ₂	SO ₂ Me	H
Me	OCH ₂ CF ₃	SO ₂ Me	H
Me	OCH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CCl ₃	SO ₂ Me	H
Me	OCHMeCH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
Me	OCH ₂ CH ₂ Br	SO ₂ Me	H
Me	Y8	SO ₂ Me	H

Table 8 (continued)

	X	Y	Z	Q
5	Me	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	Me	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	Me	OPh	SO_2Me	H
10	Me	OPh-Me-2	SO_2Me	H
	Me	OPh-Cl-4	SO_2Me	H
	Me	OPh- NO_2 -4	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
15	Me	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
20	Me	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	Me	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
25	Me	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
	Me	OCH_2Ph	SO_2Me	H
30	Me	OCHMePh	SO_2Me	H
	Me	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	Me	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	Me	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	Me	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
35	Me	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H
	Me	Y9	SO_2Me	H
	Me	Y10	SO_2Me	H
	Me	Y11	SO_2Me	H
40	Me	Y12	SO_2Me	H
	Me	Y13	SO_2Me	H
	Me	Y14	SO_2Me	H
	Me	Y15	SO_2Me	H
	Me	Y16	SO_2Me	H
45	Me	Y17	SO_2Me	H
	Me	Y18	SO_2Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	Me	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	Me	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
10	Me	Y19	SO ₂ Me	H
	Me	OCH ₂ COOMe	SO ₂ Me	H
	Me	OCH ₂ COOEt	SO ₂ Me	H
	Me	OCH ₂ COOPr-i	SO ₂ Me	H
	Me	OCH ₂ COOBu-i	SO ₂ Me	H
15	Me	OCH ₂ COOBu-t	SO ₂ Me	H
	Me	OCH ₂ COO-Y4	SO ₂ Me	H
	Me	OCHMeCOOMe	SO ₂ Me	H
	Me	OCHMeCOOEt	SO ₂ Me	H
	Me	OCHMeCOOPr-i	SO ₂ Me	H
20	Me	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Me	OCH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
25	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	Me	OCOOMe	SO ₂ Me	H
	Me	OCOOPr-i	SO ₂ Me	H
30	Me	CONH ₂	SO ₂ Me	H
	Me	CONHMe	SO ₂ Me	H
	Me	CONMe ₂	SO ₂ Me	H
	Me	OP(O)(OMe) ₂	SO ₂ Me	H
	Me	Y20	SO ₂ Me	H
35	Me	SCH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SCH ₂ C≡CH	SO ₂ Me	H
	Me	SCH ₂ CF ₃	SO ₂ Me	H
	Me	SCH ₂ CCl ₃	SO ₂ Me	H
40	Me	Y21	SO ₂ Me	H
	Me	SPh	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
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Table 8 (continued)

	X	Y	Z	Q
5	Me	Y22	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	S(O)CH ₂ C≡CH	SO ₂ Me	H
	Me	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
10	Me	Y23	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	Me	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
	Me	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
15	Me	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	Me	Y24	SO ₂ Me	H
	Me	Y25	SO ₂ Me	H
	Me	SO ₂ Ph	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
20	Me	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	Me	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
30	Me	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
35	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
40	Me	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	Me	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
45	Me	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh

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Table 8 (continued)

	X	Y	Z	Q
5	Me	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	Me	OCH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OEt	Cl	H
	Me	OCH ₂ CH ₂ OPr-i	Cl	H
10	Me	OCHMeCH ₂ OMe	Cl	H
	Me	OCH ₂ COOMe	Cl	H
	Me	OCH ₂ CH ₂ SMe	Cl	H
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	H
	Me	SCH ₂ CH ₂ OMe	Cl	H
15	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
20	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	Me	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	Me	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
25	Me	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Me	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	Me	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	Cl	Y1	SO ₂ Me	H
	Cl	Y2	SO ₂ Me	H
30	Cl	Y3	SO ₂ Me	H
	Cl	Y4	SO ₂ Me	H
	Cl	Y5	SO ₂ Me	H
	Cl	Y6	SO ₂ Me	H
	Cl	Y7	SO ₂ Me	H
35	Cl	OCH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCHMeCH=CH ₂	SO ₂ Me	H
	Cl	OCMe ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ CH=CHMe	SO ₂ Me	H
40	Cl	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	Cl	OCH ₂ C≡CH	SO ₂ Me	H
	Cl	OCHMeC≡CH	SO ₂ Me	H
45	Cl	OCMe ₂ C≡CH	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	Cl	$\text{OCH}_2\text{C} \equiv \text{CMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	Cl	OCH_2CHF_2	SO_2Me	H
	Cl	OCH_2CF_3	SO_2Me	H
10	Cl	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	OCH_2CCl_3	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
15	Cl	Y8	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CH}_2$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CCl} = \text{CHCl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	Cl	OPh	SO_2Me	H
20	Cl	OPh-Me-2	SO_2Me	H
	Cl	OPh-Cl-4	SO_2Me	H
	Cl	OPh-NO ₂ -4	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
25	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
30	Cl	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	Cl	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
35	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{OH}$	SO_2Me	H
40	Cl	OCH_2Ph	SO_2Me	H
	Cl	OCHMePh	SO_2Me	H
	Cl	$\text{OCH}_2\text{CH}_2\text{Ph}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-2-Cl}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-3-Me}$	SO_2Me	H
	Cl	$\text{OCH}_2\text{Ph-4-OMe}$	SO_2Me	H
45	Cl	$\text{OCH}_2\text{Ph-4-NO}_2$	SO_2Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	Cl	Y9	SO ₂ Me	H
	Cl	Y10	SO ₂ Me	H
	Cl	Y11	SO ₂ Me	H
	Cl	Y12	SO ₂ Me	H
10	Cl	Y13	SO ₂ Me	H
	Cl	Y14	SO ₂ Me	H
	Cl	Y15	SO ₂ Me	H
	Cl	Y16	SO ₂ Me	H
	Cl	Y17	SO ₂ Me	H
15	Cl	Y18	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
20	Cl	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	Cl	Y19	SO ₂ Me	H
	Cl	OCH ₂ COOMe	SO ₂ Me	H
	Cl	OCH ₂ COOEt	SO ₂ Me	H
	Cl	OCH ₂ COOPr-i	SO ₂ Me	H
25	Cl	OCH ₂ COOBu-i	SO ₂ Me	H
	Cl	OCH ₂ COOBu-t	SO ₂ Me	H
	Cl	OCH ₂ COO-Y4	SO ₂ Me	H
	Cl	OCHMeCOOMe	SO ₂ Me	H
	Cl	OCHMeCOOEt	SO ₂ Me	H
30	Cl	OCHMeCOOPr-i	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ CN	SO ₂ Me	H
	Cl	OCH ₂ SMe	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ SMe	SO ₂ Me	H
35	Cl	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	Cl	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
40	Cl	OCOOMe	SO ₂ Me	H
	Cl	OCOOPr-i	SO ₂ Me	H
	Cl	OCONH ₂	SO ₂ Me	H
	Cl	OCONHMe	SO ₂ Me	H
	Cl	OCONMe ₂	SO ₂ Me	H
45	Cl	OP(O)(OMe) ₂	SO ₂ Me	H
	Cl	Y20	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	C1	SCH ₂ CH=CH ₂	SO ₂ Me	H
	C1	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	C1	SCH ₂ C≡CH	SO ₂ Me	H
	C1	SCH ₂ CF ₃	SO ₂ Me	H
10	C1	SCH ₂ CCl ₃	SO ₂ Me	H
	C1	Y21	SO ₂ Me	H
	C1	SPh	SO ₂ Me	H
	C1	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	C1	SCH ₂ CH ₂ OEt	SO ₂ Me	H
15	C1	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	C1	Y22	SO ₂ Me	H
	C1	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	C1	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	C1	S(O)CH ₂ C≡CH	SO ₂ Me	H
20	C1	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	C1	Y23	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	C1	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
25	C1	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	C1	Y24	SO ₂ Me	H
	C1	Y25	SO ₂ Me	H
	C1	SO ₂ Ph	SO ₂ Me	H
30	C1	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	C1	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	C1	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
35	C1	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	C1	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
40	C1	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	C1	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
45	C1	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	C1	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph

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Table 8 (continued)

	X	Y	Z	Q
5	C1	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	C1	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
10	C1	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SPR-i	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	C1	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
15	C1	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	C1	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	C1	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	C1	OCH ₂ CH ₂ OMe	Cl	H
	C1	OCH ₂ CH ₂ OE t	Cl	H
20	C1	OCH ₂ CH ₂ OPr-i	Cl	H
	C1	OCHMeCH ₂ OMe	Cl	H
	C1	OCH ₂ COOMe	Cl	H
	C1	OCH ₂ CH ₂ SMe	Cl	H
	C1	OCH ₂ CH ₂ SO ₂ Me	Cl	H
25	C1	SCH ₂ CH ₂ OMe	Cl	H
	C1	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	C1	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	C1	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	C1	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
30	C1	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	C1	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	C1	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	C1	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	C1	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
35	C1	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
	C1	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	C1	SCH ₂ CH ₂ OE t	Cl	CH ₂ COPh
	C1	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
40	OMe	Y1	SO ₂ Me	H
	OMe	Y2	SO ₂ Me	H
	OMe	Y3	SO ₂ Me	H
	OMe	Y4	SO ₂ Me	H
	OMe	Y5	SO ₂ Me	H
45	OMe	Y6	SO ₂ Me	H
	OMe	Y7	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	OMe	$\text{OCH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCHMeCH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CMe}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}=\text{CHMe}$	SO_2Me	H
10	OMe	$\text{OCH}_2\text{CH}=\text{CMe}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{C}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCHMeC}\equiv\text{CH}$	SO_2Me	H
	OMe	$\text{OCMe}_2\text{C}\equiv\text{CH}$	SO_2Me	H
15	OMe	$\text{OCH}_2\text{C}\equiv\text{CMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{F}$	SO_2Me	H
	OMe	OCH_2CHF_2	SO_2Me	H
	OMe	OCH_2CF_3	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
20	OMe	OCH_2CCl_2	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{CH}_2\text{Cl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{Br}$	SO_2Me	H
	OMe	Y8	SO_2Me	H
25	OMe	$\text{OCH}_2\text{CCl}=\text{CH}_2$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CCl}=\text{CHCl}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{NO}_2$	SO_2Me	H
	OMe	OPh	SO_2Me	H
	OMe	OPh-Me-2	SO_2Me	H
30	OMe	OPh-Cl-4	SO_2Me	H
	OMe	OPh-NO ₂ -4	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OEt}$	SO_2Me	H
35	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPr-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-n}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-i}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-s}$	SO_2Me	H
40	OMe	$\text{OCH}_2\text{CH}_2\text{OBu-t}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{-Y4}$	SO_2Me	H
	OMe	$\text{OCHMeCH}_2\text{OMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CHMeOMe}$	SO_2Me	H
	OMe	$\text{OCH}_2\text{CH}_2\text{OPh}$	SO_2Me	H
45	OMe	$\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OMe}$	SO_2Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
	OMe	OCH ₂ Ph	SO ₂ Me	H
10	OMe	OCHMePh	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
	OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
15	OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	OMe	Y9	SO ₂ Me	H
	OMe	Y10	SO ₂ Me	H
	OMe	Y11	SO ₂ Me	H
	OMe	Y12	SO ₂ Me	H
20	OMe	Y13	SO ₂ Me	H
	OMe	Y14	SO ₂ Me	H
	OMe	Y15	SO ₂ Me	H
	OMe	Y16	SO ₂ Me	H
	OMe	Y17	SO ₂ Me	H
25	OMe	Y18	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
30	OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	OMe	Y19	SO ₂ Me	H
	OMe	OCH ₂ COOMe	SO ₂ Me	H
	OMe	OCH ₂ COOEt	SO ₂ Me	H
	OMe	OCH ₂ COOPr-i	SO ₂ Me	H
35	OMe	OCH ₂ COOBu-i	SO ₂ Me	H
	OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	OMe	OCHMeCOOMe	SO ₂ Me	H
	OMe	OCHMeCOOEt	SO ₂ Me	H
40	OMe	OCHMeCOOPr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	OMe	OCH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
45	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	OMe	OCH ₂ CH ₂ SP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	OMe	OCOOME	SO ₂ Me	H
10	OMe	OCOOP <i>r</i> -i	SO ₂ Me	H
	OMe	CONH ₂	SO ₂ Me	H
	OMe	CONHMe	SO ₂ Me	H
	OMe	CONMe ₂	SO ₂ Me	H
	OMe	OP(O)(OMe) ₂	SO ₂ Me	H
15	OMe	Y20	SO ₂ Me	H
	OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SCH ₂ C≡CH	SO ₂ Me	H
	OMe	SCH ₂ CF ₃	SO ₂ Me	H
20	OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	OMe	Y21	SO ₂ Me	H
	OMe	SPh	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SCH ₂ CH ₂ OE <i>t</i>	SO ₂ Me	H
25	OMe	SCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	Y22	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
30	OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y23	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
35	OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	OMe	Y24	SO ₂ Me	H
	OMe	Y25	SO ₂ Me	H
	OMe	SO ₂ Ph	SO ₂ Me	H
40	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OE <i>t</i>	SO ₂ Me	H
	OMe	SO ₂ CH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	H
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
45	OMe	OCH ₂ CH ₂ OE <i>t</i>	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OP <i>r</i> -i	SO ₂ Me	CH ₂ Ph

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Table 8 (continued)

	X	Y	Z	Q
5	OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
10	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
15	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
20	OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
25	OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	OMe	OCH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OEt	Cl	H
30	OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	OMe	OCHMeCH ₂ OMe	Cl	H
	OMe	OCH ₂ COOMe	Cl	H
	OMe	OCH ₂ CH ₂ SMe	Cl	H
	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
35	OMe	SCH ₂ CH ₂ OMe	Cl	H
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
40	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
45	OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh

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Table 8 (continued)

	X	Y	Z	Q
5	OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh
10	CH ₂ OMe	Y1	SO ₂ Me	H
	CH ₂ OMe	Y2	SO ₂ Me	H
	CH ₂ OMe	Y3	SO ₂ Me	H
	CH ₂ OMe	Y4	SO ₂ Me	H
	CH ₂ OMe	Y5	SO ₂ Me	H
15	CH ₂ OMe	Y6	SO ₂ Me	H
	CH ₂ OMe	Y7	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ CH=CH ₂	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ CMe=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CH	SO ₂ Me	H
25	CH ₂ OMe	OCHMeC≡CH	SO ₂ Me	H
	CH ₂ OMe	OCMe ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ C≡CMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ F	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHF ₂	SO ₂ Me	H
30	CH ₂ OMe	OCH ₂ CF ₃	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
35	CH ₂ OMe	OCH ₂ CH ₂ Br	SO ₂ Me	H
	CH ₂ OMe	Y8	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CCl=CHCl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NO ₂	SO ₂ Me	H
40	CH ₂ OMe	OPh	SO ₂ Me	H
	CH ₂ OMe	OPh-Me-2	SO ₂ Me	H
	CH ₂ OMe	OPh-Cl-4	SO ₂ Me	H
	CH ₂ OMe	OPh-NO ₂ -4	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OPr-n	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-n	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-i	SO ₂ Me	H
10	CH ₂ OMe	OCH ₂ CH ₂ OBu-s	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ -Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CHMeOMe	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ OPh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OCHMeCH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OH	SO ₂ Me	H
20	CH ₂ OMe	OCH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCHMePh	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ Ph	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-2-Cl	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-3-Me	SO ₂ Me	H
25	CH ₂ OMe	OCH ₂ Ph-4-OMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ Ph-4-NO ₂	SO ₂ Me	H
	CH ₂ OMe	Y9	SO ₂ Me	H
	CH ₂ OMe	Y10	SO ₂ Me	H
	CH ₂ OMe	Y11	SO ₂ Me	H
30	CH ₂ OMe	Y12	SO ₂ Me	H
	CH ₂ OMe	Y13	SO ₂ Me	H
	CH ₂ OMe	Y14	SO ₂ Me	H
	CH ₂ OMe	Y15	SO ₂ Me	H
	CH ₂ OMe	Y16	SO ₂ Me	H
35	CH ₂ OMe	Y17	SO ₂ Me	H
	CH ₂ OMe	Y18	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NH ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NHPr-i	SO ₂ Me	H
40	CH ₂ OMe	OCH ₂ CH ₂ NMe ₂	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ NEt ₂	SO ₂ Me	H
	CH ₂ OMe	Y19	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOEt	SO ₂ Me	H
45	CH ₂ OMe	OCH ₂ COOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COOBu-i	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ COOBu-t	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ COO-Y4	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOMe	SO ₂ Me	H
	CH ₂ OMe	OCHMeCOOEt	SO ₂ Me	H
10	CH ₂ OMe	OCHMeCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ CN	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	H
15	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	H
	CH ₂ OMe	OCOOMe	SO ₂ Me	H
20	CH ₂ OMe	OCOOPr-i	SO ₂ Me	H
	CH ₂ OMe	OCONH ₂	SO ₂ Me	H
	CH ₂ OMe	OCONHMe	SO ₂ Me	H
	CH ₂ OMe	OCONMe ₂	SO ₂ Me	H
	CH ₂ OMe	OP(O)(OMe) ₂	SO ₂ Me	H
25	CH ₂ OMe	Y20	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ C≡CH	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CF ₃	SO ₂ Me	H
30	CH ₂ OMe	SCH ₂ CCl ₃	SO ₂ Me	H
	CH ₂ OMe	Y21	SO ₂ Me	H
	CH ₂ OMe	SPh	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SCH ₂ CH ₂ OEt	SO ₂ Me	H
35	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	Y22	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	S(O)CH ₂ C≡CH	SO ₂ Me	H
40	CH ₂ OMe	S(O)CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y23	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CH ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH=CMe ₂	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ C≡CH	SO ₂ Me	H
45	CH ₂ OMe	SO ₂ CH ₂ CF ₃	SO ₂ Me	H

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Table 8 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	SO ₂ CH ₂ CH ₂ Cl	SO ₂ Me	H
	CH ₂ OMe	Y24	SO ₂ Me	H
	CH ₂ OMe	SO ₂ Ph	SO ₂ Me	H
10	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OEt	SO ₂ Me	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	H
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OEt	SO ₂ Me	CH ₂ Ph
15	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCHMeCH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Me	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ Ph
20	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ S(O)Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
25	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	SO ₂ Me	CH ₂ COPh
30	CH ₂ OMe	OCH ₂ CH ₂ SOMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Pr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
35	CH ₂ OMe	SCH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OPr-i	SO ₂ Me	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ OEt	Cl	H
40	CH ₂ OMe	OCH ₂ CH ₂ OPr-i	Cl	H
	CH ₂ OMe	OCHMeCH ₂ OMe	Cl	H
	CH ₂ OMe	OCH ₂ COOMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	H
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	H
45	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	H
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	H

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Table 8 (continued)

	X	Y	Z	Q
5	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SOMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ Ph
10	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ Ph
	CH ₂ OMe	OCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SMe	Cl	CH ₂ COPh
	CH ₂ OMe	OCH ₂ CH ₂ SO ₂ Me	Cl	CH ₂ COPh
15	CH ₂ OMe	SCH ₂ CH ₂ OMe	Cl	CH ₂ COPh
	CH ₂ OMe	SCH ₂ CH ₂ OEt	Cl	CH ₂ COPh
	CH ₂ OMe	SO ₂ CH ₂ CH ₂ OMe	Cl	CH ₂ COPh

When the compound of the present invention is to be used as an agricultural or horticultural herbicide, it is usually mixed with a suitable carrier, for instance, a solid carrier such as clay, talc, bentonite or diatomaceous earth, or a liquid carrier such as water, an alcohol (such as benzene, toluene or xylene), a chlorinated hydrocarbon, an ether, a ketone, an ester (such as ethyl acetate) or an acid amide (such as dimethylformamide). If desired, an emulsifier, a dispersing agent, a suspending agent, a penetrating agent, a spreader or a stabilizer may be added to prepare an optional formulation such as a liquid formulation, an emulsifiable concentrate, a wettable powder, a dust, a granule or a flowable.

Further, if desired, other herbicides, various insecticides, bacteriocides, plant regulating agents or synergism agents may be combined at the time of the preparation of the formulations or at the time of the application of the herbicides.

As other herbicides to be combined with the herbicide of the present invention, there may be mentioned, for instance, compounds disclosed in Farm Chemicals Handbook, the 73rd Edition (1987). Among them, there may be mentioned, for example, atrazine, cyanazine, alachlor, metolachlor, EPTC, 2,4-D, butylate, dicamba, bromoxynil, tridiphane, isoproturon, chlortoluron, triallate, diflufenican, diclofop methyl, diphenzoquat, imazamethabenz methyl, ioxynil, methabenzthiazuron, fluroxypil, chlorsulfuron and N-[(4,6-di(difluoromethoxy)pyrimidin-2-yl)aminocarbonyl]-2-methoxycarbonylbenzenesulfonamide. N-[(4,6-dimethoxypyrimidin-2-yl)-aminocarbonyl]-3-chloro-4-methoxycarbonyl-1-methylpyrazole-5-sulfonamide of N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-3-bromo-4-methoxycarbonyl-1-methylpyrazole-5-sulfonamide as disclosed in U.S. Patent 4,668,277, or N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonylpyridine-2-sulfonamide as disclosed in Japanese Unexamined Patent Publication No. 223180/1987 may also be combined with the herbicide of the present invention.

The dose varies depending upon the application site, the season for application, the method for application, the type of the crop plant, etc. In general, however, the dose is usually within a range of from 0.001 to 10 kg per hectare as the amount of the active ingredient.

Now, Formulation Examples of the herbicides containing the compounds of the present invention as active ingredients, will be given. However, it should be understood that the present invention is by no means restricted to such specific Examples. In the following Formulation Examples, "parts" means "parts by weight".

FORMULATION EXAMPLE 1: Wettable powder

5	Compound No. 1 of the present invention	60	parts
	Zeeklite PFP (tradename for a kaolin-type clay, manufactured by Zeeklite Industries, Co., Ltd.)	33	parts
	Sorpol 5039 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.)	5	parts
	Carplex (tradename for a coagulation-preventing agent composed of a mixture of a surfactant and fine silica powder, manufactured by Shionogi Pharmaceutical Co., Ltd.)	2	parts

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The above ingredients are homogeneously pulverized and mixed to form a wettable powder.

15 FORMULATION EXAMPLE 2: Emulsifiable concentrate

20	Compound No. 1 of the present invention	1.5	parts
	Xylene	78.5	parts
	N,N-dimethylformamide	15	parts
	Sorpol 2680 (tradename for a mixture of a nonionic surfactant and an anionic surfactant, manufactured by Toho Chemical Co., Ltd.)	5	parts

25

The above ingredients are homogeneously mixed to form an emulsifiable concentrate.

30 FORMULATION EXAMPLE 3: Flowable

35	Compound No. 1 of the present invention	40	parts
	Agrizole B-710 (tradename for a nonionic surfactant, manufactured by Kao Corporation)	10	parts
	Runox 1000C (tradename for an anionic surfactant, manufactured by Toho Chemical Co., Ltd.)	0.5	part
	1% Rodopol water (tradename for a thickner, manufactured by Rhone-Poulenc)	20	parts
	Water	29.5	parts

40

The above ingredients are homogeneously mixed to form a flowable.

45 FORMULATION EXAMPLE 4: Liquid formulation

50	Sodium salt of Compound No 1 of the present invention	30	parts
	Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries Ltd.)	10	parts
	Water	60	parts

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The above ingredients are homogeneously mixed to obtain a liquid formulation.

FORMULATION EXAMPLE 5: Liquid formulation

Potassium salt of Compound No. 1 of the present invention	30	parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries Ltd.)	10	parts
Water	60	parts

5

The above ingredients are homogeneously mixed to obtain a liquid formulation.

10 FORMULATION EXAMPLE 6: Liquid formulation

Calcium salt of Compound No. 1 of the present invention	30	parts
Nippol (tradename for a nonionic surfactant, manufactured by Nissan Chemical Industries Ltd.)	10	parts
Water	60	parts

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The above ingredients are homogeneously mixed to obtain a liquid formulation.

FORMULATION EXAMPLE 7: Liquid formulation

Isopropylamine salt of Compound No. 1 of the present invention	10	parts
Sorpol W-150 (tradename for a nonionic surfactant, manufactured by Toho Chemical Co., Ltd.)	10	parts
Water	80	parts

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The above ingredients are homogeneously mixed to form a liquid formulation.

In their use, the above wettable powder, emulsifiable concentrates, flowables or liquid formulations are diluted with water from 50 to 1,000 times and applied so that the respective active ingredients will be from 0.001 to 5 kg per hectare.

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The compounds of the present invention are applicable not only to agricultural and horticultural fields such as upland fields, paddy fields and orchards, but also to non-agricultural fields such as athletic fields, vacant fields and railway sides for the control of various weeds. The dose in their application varies depending upon the application site, the season for application, the type of crop plants, etc. However, it is usually within a range of from 0.001 to 5 kg per hectare.

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Now, the herbicidal activities of the compounds of the present invention will be described with respect to specific Test Examples.

45 TEST EXAMPLE 1: Test on the herbicidal effects in soil treatment

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A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of *Echinochloa crus-galli*, *Setaria viridis*, *Eleusine indica*, *Digitaria adscendens*, *Panicum dichotomiflorum*, *Abutilon theophrasti*, *Amaranthus lividus*, *Polygonum longisetum* and *Zea mays* were sown, and tubers of *Cyperus esculentus* were further planted. The soil was covered thereon in the thickness of about 1.5 cm, and then a herbicide solution was applied onto the surface of the soil uniformly so that the active ingredient was distributed at a predetermined concentration. The herbicide solution was prepared by diluting the wettable powder, the emulsifiable concentrate, the liquid formulation or the flowable as described in the foregoing Formulation Examples with water and applied onto the entire soil surface by means of a small spray. Three weeks after the application of the herbicidal solution, the herbicidal effects against each weed were determined on the basis of the following standard ratings. The results thereby obtained are shown in Table 9. The Compound Nos. correspond to the Compound Nos. in Table 2.

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Standard ratings:

- 5: Growth control rate of more than 90% (almost completely withered)
 4: Growth control rate of from 70 to 90%
 3: Growth control rate of from 40 to 70%
 2: Growth control rate of from 20 to 40%
 1: Growth control rate of from 5 to 20%
 0: Growth control rate of less than 5% (almost non-effective)

The above growth control rates were calculated by the following equation:

$$10 \text{ Growth control rate (\%)} = (1 - \frac{T}{N}) \times 100$$

where T: Weight of the weed growth above the soil surface of the treated area

N: Weight of the weed growth above the soil surface of the non-treated area

15 TEST EXAMPLE 2: Test 1 on the herbicidal effects in foliage treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of Echinochloa crus-galli, Setaria viridis, Eleusine indica, Digitaria adscendens, Panicum dichotomiflorum, Xanthium strumarium, Abutilon theophrasti, Amaranthus lividus, Polygonum longisetum and Zea mays were spot-wisely sown, and tubers of Cyperus esculentus were further planted. Then, the soil was covered thereon in a thickness of about 1.5 cm. When the various weeds and crop plant grew to the 2 or 3 leaf stage, a herbicidal solution was uniformly sprayed on the foliages so that the active ingredient was applied in a predetermined concentration.

The herbicidal solution was prepared by diluting the wettable powder, the emulsifier concentrate, the liquid formulation or the flowable as described in the above Formulation Examples with water and applied onto the entire surface of the foliages of the weeds and the crop plants by a small spray. Two weeks after the application of the herbicide solution, the herbicidal effects against each weed and Zea mays were determined on the basis of the standard ratings described in Test Example 1. The results are shown in Table 10. The Compound Nos. in Table 10 correspond to the Compound Nos. in Table 2.

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TEST EXAMPLE 3: Test 2 on the herbicidal effects in foliage treatment

A plastic box having a length of 15 cm, a width of 22 cm and a depth of 6 cm was filled with a sterilized diluvium soil, and seeds of Veronica persica, Stellaria media, Gallium spurium, Matricaria matricarioides, Polygonum persicaria, Lamium purpureum, Solanum nigrum and Triticum aestivum were spot-wisely sown. Then, the soil was covered thereon in a thickness of about 1.5 cm. When the various weeds and crop plant grew to the 2 or 3 leaf stage, a herbicidal solution was uniformly sprayed on the foliages so that the active ingredient was applied in a predetermined concentration.

The herbicidal solution was prepared by diluting the wettable powder, the emulsifiable concentrate, the liquid formulation or the flowable as described in the above Formulation Examples with water and applied onto the entire surface of the foliages of the weeds and Triticum aestivum by a small spray. Two weeks after the application of the herbicide solution, the herbicidal effects against each weed and Triticum aestivum were determined on the basis of the standard ratings described in Test Example 1. The results are shown in Table 11. The Compound Nos. in Table 11 correspond to Compound Nos. in Table 2.

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In Tables 9, 10 and 11, the following abbreviations are used.

- Dose: Dose of active ingredient (g/are)
 EC: Echinochloa crus-galli (barnyardgrass)
 SE: Setaria viridis (green foxtail)
 50 EL: Eleusine indica (goosegrass)
 DI: Digitaria adscendens (large crabgrass)
 PA: Panicum dichotomiflorum (fall panicum)
 AB: Abutilon theophrasti (velvet leaf)
 AM: Amaranthus lividus (livid amaranth)
 55 PO: Polygonum longisetum (persicaria blumei gross)
 XA: Xanthium strumarium (cocklebur)
 CY: Cyperus esculentus (yellow nutsedge)
 ZE: Zea mays (corn)

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VE: Veronica persia (birdseye speedweel)
 ST: Stellaria media (chickweed)
 GA: Galium spurium (catchweed)
 MA: Matricaria matricarioides (pineappleweed)
 5 PP: Polygonum persicaria (ladythumb)
 LA: Lamium purpureum (red deadnettle)
 SO: Solanum nigrum (black nighthshade)
 TR: Triticum aestivum (wheat)

Table 9

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Compound No.	Dose g/are	EC	SE	EL	DI	PA	AB	AM	PO	CY	ZE
1	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
4	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
6	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
7	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
11	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
18	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
19	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
20	1	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	0
Comparative Compound A	4	3	1	3	3	1	4	5	5	0	0
	8	4	2	4	4	2	5	5	5	0	0
	16	5	3	5	5	3	5	5	5	1	1
Comparative Compound B	4	5	5	5	5	5	1	1	1	2	0
	8	5	5	5	5	5	2	2	2	3	0
	16	5	5	5	5	5	3	3	3	4	1

Table 10

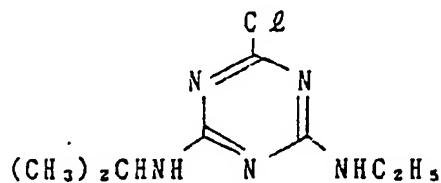
Compound No.	Dose g/are	EC	SE	EL	DI	PA	AB	AM	PO	XA	CY	ZE
1	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
4	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
6	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
7	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
11	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
18	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
19	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
20	1	5	5	5	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	5	5	5	0
	4	5	5	5	5	5	5	5	5	5	5	0
Comparative Compound A	4	3	1	2	3	0	3	5	5	4	0	0
	8	4	2	3	4	1	5	5	5	5	0	1
	16	5	3	4	5	2	5	5	5	5	1	2
Comparative Compound B	4	4	3	3	4	3	0	2	2	0	1	0
	8	4	4	4	4	4	1	3	3	1	2	1
	16	5	5	5	5	5	2	4	4	2	3	2

Table 11

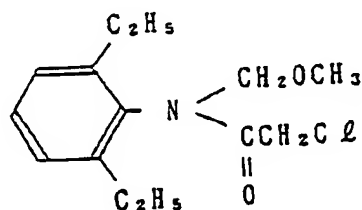
Compound No.	Dose g/are	VE	ST	GA	MA	PP	LA	SO	TR
1	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	0
7	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
11	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	0
18	0.5	5	5	5	5	5	5	5	0
	1	5	5	5	5	5	5	5	0
	2	5	5	5	5	5	5	5	0
Comparative Compound C	1	4	4	3	2	4	2	4	0
	2	5	5	4	4	5	4	5	1

In Tables 9 and 10, the Comparative Compounds are as follows:

Comparative Compound A: Atrazine

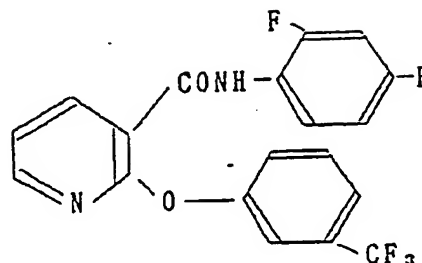


Comparative Compound B: Alachlor



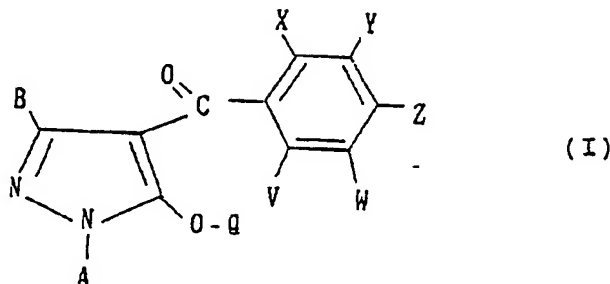
In Table 11, the Comparative Compound is as follows:

Comparative Compound C: Difluphenican



Claims

1. A pyrazole derivative of the formula I



- wherein A is a C₁-C₄ alkyl group, a C₂-C₄ alkenyl group or a C₂-C₄ alkynyl group;
 B is a hydrogen atom, a C₁-C₃ alkyl group, a halogen atom, a C₁-C₃ haloalkyl group, a C₁-C₃ alkoxy group, a C₁-C₃ alkylthio group, a C₂-C₄ alkoxyalkyl group, a C₂-C₄ alkylthioalkyl group or a C₂-C₄ alkoxycarbonyl group;
 X is a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆ haloalkyl group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkylcarbonyl group, a C₂-C₆ alkoxycarbonyl group, an aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆ alkyl group, a C₁-C₆ haloalkoxy group, a C₁-C₆ alkylthio group or a C₂-C₆ alkylthioalkyl group;
 Y is -OR¹ (wherein R¹ is a C₃-C₈ cycloalkyl group, a C₄-C₈ cycloalkylalkyl group, a C₃-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₃-C₈ halocycloalkylalkyl group, a C₃-C₆ haloalkenyl group, a C₂-C₆ haloalkynyl group, a C₂-C₆ nitroalkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-O-R¹ (wherein L is a C₁-C₆ alkylene group which may be substituted by a C₁-C₃ alkyl group, and R¹ is as defined above), -O-L-OH (wherein L is as defined above), -O-L-O-L-O-R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆ alkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-R³ (wherein L is as defined above, and R³ is a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), -O-L-M (wherein L and M are as defined above), -O-L-NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and R⁵ form a ring together with the adjacent nitrogen atom), -O-L-COOR⁴ (wherein L and R⁴ are as defined above), -O-CH=CH-COOR⁴ (wherein R⁴ is as defined above), -O-L-CN (wherein L is as defined above), -O-L-C(O)-R² (wherein L and R² are as defined above), -O-L-S(O)_n-R⁴ (wherein L and R⁴ are as defined above, and n is an integer of from 0 to 2), -O-COOR⁴ (wherein R⁴ are as defined above), -O-CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above), -OP-(O)(OR⁴)₂ (wherein R⁴ is as defined above), -S(O)_nR¹ (wherein R¹ and n are as defined above), or -S(O)_n-L-O-R¹ (wherein L, R¹ and n are as defined above);
 Z is a halogen atom, a nitro group, a C₁-C₃ alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or -S(O)_nR⁶ (wherein n is as defined above, and R⁶ is a C₁-C₃ alkyl group or a C₁-C₃

haloalkyl group);

V is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group or a C₁-C₄ alkoxy group;

W is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group, a C₁-C₄ haloalkyl group, a C₁-C₄ alkoxy group, a C₂-C₆ alkoxyalkyl group, a C₂-C₅ alkoxycarbonyl group, a C₁-C₃ haloalkoxy group, a nitro group, a cyano group or -S(O)_n-R⁵ (wherein n and R⁵ are as defined above); and

Q is a hydrogen atom, a C₁-C₆ alkyl group which may be substituted by a halogen atom, a C₁-C₆ alkenyl group which may be substituted by a halogen atom, a C₁-C₆ alkynyl group which may be substituted by a halogen atom, a cyanomethyl group, -C(O)-R⁷ (wherein R⁷ is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a C₁-C₆ alkyl group, a C₁-C₆ alkenyl group, a C₁-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₁-C₆ haloalkenyl group, a C₁-C₆ haloalkynyl group, a halogen atom, a nitro group and a trifluoromethyl group, a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, or a hydroxyl group), -S(O)₂R⁷ (wherein R⁷ is as defined above), -P(O)(OR⁷)₂ (wherein R⁷ is as defined above), -L-C(O)-R⁷ (wherein L and R⁷ are as defined above), -L-C(O)-N(R⁸)(R⁹) (wherein L is as defined above, and each of R⁸ and R⁹ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group), -L-R¹⁰ (wherein L is as defined above, and R¹⁰ is a phenyl group which may be substituted by the same or different substituents selected from the group consisting of a halogen atom, a nitro group and a trifluoromethyl group, a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, or a hydroxyl group), -L-N(R⁸)(R⁹) (wherein L, R⁸ and R⁹ are as defined above), -L-OR¹¹ (wherein L is as defined above, and R¹¹ is a hydrogen atom, a C₁-C₆ alkyl group, or a C₁-C₆ alkenyl group), -L-OC(O)R¹² (wherein L is as defined above, and R¹² is a C₁-C₆ alkyl group or a C₁-C₆ alkoxy group), -L-S(O)_nR¹¹ (wherein L, n and R¹¹ are as defined above), -L-SC(O)R⁸ (wherein L and R⁸ are as defined above,



30

(wherein each L1 and L2 which may be the same or different is a methylene group, an oxygen atom or a sulfur atom, R¹² is a hydrogen atom or a C₁-C₃ alkyl group, and m is 2 or 3); and a salt thereof.

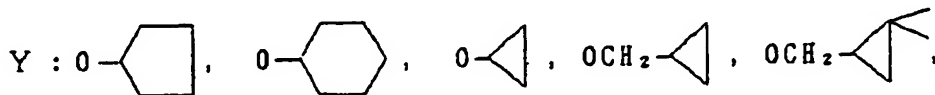
2. The pyrazole derivative of the formula I according to Claim 1, wherein A, B, X, Y, Z and Q are as follows:

35 A : Me, Et, n-Pr, i-Pr, CH₂CH=CH₂, CH₂C≡CH, t-Bu

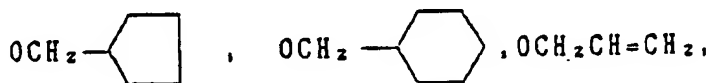
B : H, Me, Et, n-Pr, i-Pr, Cl, Br, CH₂Cl, CF₃, OMe, OEt, OPr-i, SMe, CH₂OMe, CH₂SMe, CO₂Me, CO₂Et

X : Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, OMe, OEt, OPr-n, OPr-i, OBU-n, OBU-i, OBU-s, OBU-t, F, Cl, Br, I, NO₂, CN, CH₂F, CHF₂, CF₃, CH₂CF₃, CH₂Cl, CCl₃, CHClMe, CH₂CH₂Cl, CHClCH₂Cl, CH₂Br, CHBrMe, CH₂CH₂Br, CH₂OMe, CH₂OEt, CH₂OPr-n, CH₂OPr-i, CH₂OBU-n, CH₂OBU-i, CH₂OBU-s, CH₂OBU-t, CHMeOMe, CHMeOEt, CHMeOPr-n, CHMeOPr-i, CHMeOBU-n, CHMeOBU-i, CHMeOBU-s, CHMeOBU-t, CH₂CH₂OMe, CH₂CH₂OEt, CH₂CH₂OPr-i, Ac, COEt, COPr-n, COPr-i, COOMe, COOEt, COOPr-i, CONHMe, CONHEt, CONMe₂, CONEt₂, CONEtMe, OCHF₂, OCF₃, OCH₂CF₃, SMe, SEt, CH₂SMe, CH₂SEt, CHMeSMe, CHMeSEt

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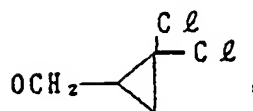


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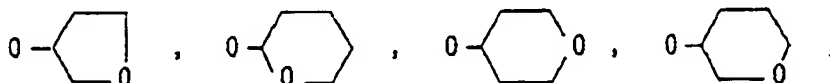
OCHMeCH=CH₂, OCM₂CH=CH₂, OCH₂CM₂=CH₂, OCH₂CH=CHMe, OCH₂CH-CMe₂, OCH₂C≡CH, OCHMeC≡CH, OCM₂C≡CH, OCH₂C≡CMe, OCH₂CH₂F, OCH₂CHF₂, OCH₂CF₃, OCH₂CH₂Cl, OCHMeCH₂Cl, OCH₂CCl₃, OCH₂CH₂CH₂Cl, OCH₂CH₂Br,



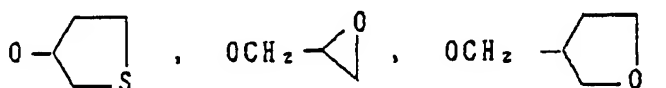
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10 OCH2CCl=CH2 , OCH2CH2CH=CH2 , OCH2CCl=CHCl , OCH2CH2NO2 , OPh , OPh-Me-2 , OPh-Cl-4 ,
OPh-NO2-4 , OCH2CH2OMe , OCH2CH2OEt , OCH2CH2OPr-n , OCH2CH2OPr-i , OCH2CH2OBu-n ,
OCH2CH2OBu-i , OCH2CH2Bu-s , OCH2CH2OBu-t , OCHMeCH2OMe , OCH2CH2OPh ,
OCH2CH2OCH2CH2OMe , OCH2CH2OH , OCH2CH2OCHMeCH2OMe , OCH2Ph , OCHMePh , OCH2Ph-4-Me ,
OCH2Ph-4-Cl , OCH2CH2Ph ,

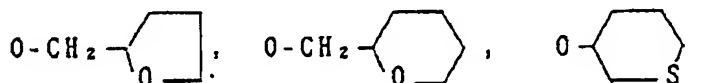
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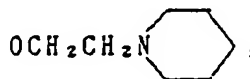


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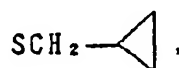
OCH2CH2NH2 , OCH2CH2NHMe , OCH2CH2NMe2 , OCH2CH2NEt2 ,

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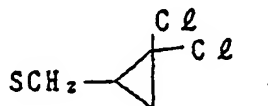
35 OCH2COOMe , OCH2COOEt , OCH2COOPr-n , OCH2COOPr-i , OCH2COOBu-t , OCHMeCOOMe , OCHMeCOOEt , OCHMeCOOPr-n , OCHMeCOOPr-i , OCHMeCOOBu-t , OCH2CH2CN , OCH2CN , OCHMeCN ,
OCH2SMe , OCH2C(O)Ph , OCH2C(O)Me , OCH2CH2SMe , OCH2CH2SOMe , OCH2CH2SO2Me ,
OCH2CH2SEt , OCH2CH2SO2Et , OCOOMe , OCOEt , OCOOPr-i , OC(=O)NH2 , OC(=O)NHMe , OC(=O)NMe2 , OP(O)(OMe)2 , OP(O)(OEt)2 ,

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SCH2CH=CH2 , SCH2C=CH , SCH2CF3 , SCH2CH2Cl , SCH2CCl3 ,

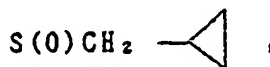
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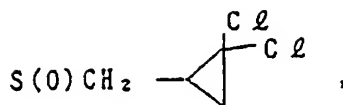
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SPh , SCH2CH2OMe , SCH2CH2OEt , SCH2CH2OPr-i , SCH2CH2OPh ,

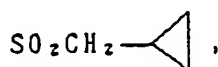
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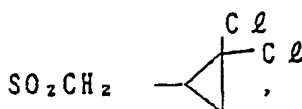
S(O)CH2CH=CH2 , S(O)CH2CH=CH , S(O)CH2CF3 , S(O)CH2CH2Cl ,



$S(O)Ph$, $S(O)CH_2CH_2OMe$, $S(O)CH_2CH_2OEt$, $S(O)CH_2CH_2OPr-i$, $S(O)CH_2CH_2OPh$,



$SO_2CH_2CH=CH_2$, $SO_2CH_2C\equiv CH$, $SO_2CH_2CF_3$, $SO_2CH_2CH_2Cl$,



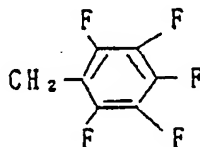
SO_2Ph , $SO_2CH_2CH_2OMe$, $SO_2CH_2CH_2OEt$, $SO_2CH_2CH_2OPr-i$,

Z: F, Cl, Br, I, NO_2 , OMe, OEt, OPr-n, OPr-i, CF_3 , CN, SMe, SOMe, SO_2Me , SCF_3 , $SOCF_3$, SO_2CF_3

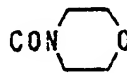
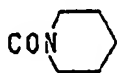
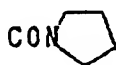
Q: H, Me, Et, n-Pr, i-Pr, n-Bu, i-Bu, s-Bu, t-Bu, CH_2CH_2Cl , CH_2CF_3 , $CHClMe$, CH_2CH_2Br , $CHClCH_2Cl$,

$CH_2CH=CH_2$, $CH_2CMe=CH_2$, $CH_2CH=CHMe$, $CH_2C\equiv CH$, $CH_2CCl=CH_2$, CH_2CN , CH_2Ph , $CH_2Ph-Cl-2$,

$CH_2Ph-Cl-3$, $CH_2Ph-Me-2$,



$CH_2Ph-Me-2,4$, $CH_2Ph-Me-4$, $CHMePh$, CH_2Ph-NO_2-2 , CH_2Ph-CF_3-3 , CH_2OMe , CH_2OEt , CH_2OH , $CHMeOH$, CH_2NHMe , CH_2NMe_2 , $CHMeNMe_2$, CH_2COPh , $CH_2COPh-NO_2-4$, $CH_2COPh-Me-4$, $CH_2COPh-Cl-4$, $CH_2COPh-Me-2,4$, $CH_2COPh-CF_3-4$, CH_2Ac , CH_2COEt , $CHMeAc$, CH_2CO_2Me , CH_2CO_2Et , CH_2CO_2Pr-n , CH_2CO_2Pr-i , CH_2CO_2Bu-t , CH_2CO_2H , $CHMeCO_2H$, $CH_2CONHMe$, CH_2CONMe_2 , CH_2CONH_2 , CH_2CONEt_2 , $CH_2CONPr-n_2$, $CH_2OCH_2CH=CH_2$, CH_2OAc , CH_2COEt , $CH_2COPr-i$, $CH_2COBu-t$, CH_2OCO_2Me , CH_2OCO_2Et , CH_2OCO_2Pr-i , CH_2OCO_2Bu-t , CH_2SMe , CH_2SEt , $CH_2SCH_2CH=CH_2$, CH_2SAC , $CH_2SCOBu-t$, CH_2SO_2Me , CH_2SO_2Me , CH_2SO_2Et , $CH_2SO_2CH_2CH=CH_2$, $CH_2NHCH_2CH=CH_2$, $CH_2NMeCH_2CH=CH_2$, CH_2NHAc , $CH_2NHCOEt$, CH_2NHCO_2Me , CH_2NHCO_2Et , CH_2NMeCO_2Me , $COPh$, $COPh-Me-4$, $COPh-NO_2-2$, $COPh-Cl-2,4$, Ac, COEt, COPr-n, COPr-i, COBu-n, COBu-t, $COCH_2Cl$, $COCHCl_2$, $COCCl_3$, $COCF_3$, $COCH_2OMe$, $COCH_2OPh$, $COCH_2CH=CHCH_3$, CO_2Me , CO_2Et , CO_2Bu-t , CO_2Pr-i , $CONHMe$, $CONMe_2$, $CONH_2$, $CONEt_2$, $CONPr-n_2$, $CON(CH_2CH=CH_2)_2$, $CONMePh$,

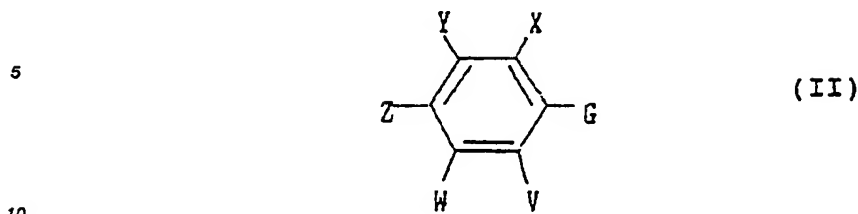


CO_2CH_2Ph , CO_2Ph , SO_2Me , SO_2Et , $SO_2CH_2CH=CH_2$, SO_2Ph , SO_2Ph , $SO_2Ph-Me-4$, $SO_2Ph-Cl-4$, $SO_2Ph-(NO_2)_2-2,4$, SO_2CF_3 , $P(=O)(OMe)_2$, $P(=O)(OEt)_2$, $P(=O)(OPr-n)_2$, $P(=O)(OPr-i)_2$, $P(=S)(OMe)_2$, $P(=S)(OEt)_2$, $P(=O)OMeOPh$, $P(=O)(OCH_2CH=CH_2)_2$, $P(=O)OPhOCH_2CH=CH_2$; and a salt thereof.

3. A selective herbicidal composition comprising a herbicidally effective amount of a pyrazole derivative of the formula I as defined in Claim 1 or its salt and an agricultural carrier or diluent.

4. A method for controlling weeds, which comprises applying a herbicidally effective amount of a pyrazole derivative of the formula I as defined in Claim 1 or its salt to a locus to be protected.

5. A substituted benzene derivative of the formula II:



wherein G is a carboxyl group, a halocarbonyl group or a cyanocarbonyl group;
 x is a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, a halogen atom, a nitro group, a cyano group, a C₁-C₆ haloalkyl group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkylcarbonyl group, a C₂-C₆ alkoxycarbonyl group, an
 15 aminocarbonyl group substituted independently by hydrogen or by a C₁-C₆ alkyl group, a C₁-C₆ haloalkoxy group, a C₁-C₆ alkylthio group or a C₂-C₆ alkylthioalkyl group;
 Y is -OR¹ (wherein R¹ is a C₃-C₈ cycloalkyl group, a C₄-C₈ cycloalkylalkyl group, a C₃-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₁-C₆ haloalkyl group, a C₃-C₈ halocycloalkylalkyl group, a C₃-C₆ haloalkenyl group, a C₂-C₆ haloalkynyl group, a C₂-C₆ nitroalkyl group or a phenyl group which may be substituted by
 20 a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-O-R¹ (wherein L is a C₁-C₆ alkylene group which may be substituted by a C₁-C₃ alkyl group, and R¹ is as defined above), -O-L-OH (wherein L is as defined above), -O-L-O-L-O-R² (wherein L is as defined above, and R² is a hydrogen atom, a C₁-C₆ alkyl group or a phenyl group which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-L-R³ (wherein L is as defined above, and R³ is a phenyl group
 25 which may be substituted by a C₁-C₃ alkyl group, a halogen atom, a nitro group or a C₁-C₃ alkoxy group), -O-M (wherein M is a 3- to 6-membered alicyclic group containing not more than two sulfur or oxygen atoms and formed by a linkage of from 1 to 4 carbon atoms), -O-L-M (wherein L and M are as defined above), O-L-NR⁴R⁵ (wherein L is as defined above and each of R⁴ and R⁵ which may be the same or different is a hydrogen atom or a C₁-C₆ alkyl group, or R⁴ and R⁵ form a ring together with the adjacent nitrogen atom), -O-L-COOR⁴ (wherein L and R⁴ are as defined above), -O-CH=CH-COOR⁴ (wherein R⁴ is as defined above), -O-L-CN (wherein L is as defined above), -O-L-C(O)-R² (wherein L and R² are as defined above), -O-L-S-(O)_n-R⁴ (wherein L and R⁴ are as defined above, and n is an integer of from 0 to 2), -O-COOR⁴ (wherein R⁴ are as defined above), -O-CONR⁴R⁵ (wherein R⁴ and R⁵ are as defined above), -OP-(O)(OR⁴)₂ (wherein R⁴ is as defined above), -S(O)_nR¹ (wherein R¹ and n are as defined above), or-S(O)_n-L-O-R¹ (wherein L, R¹ and n are as defined above);
 30 Z is a halogen atom, a nitro group, a C₁-C₃ alkoxy group, a trifluoromethyl group, a trifluoromethoxy group, a cyano group or -S(O)_nR⁶ (wherein n is as defined above, and R⁶ is a C₁-C₃ alkyl group or a C₁-C₃ haloalkyl group);
 V is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group or a C₁-C₄ alkoxy group; and
 40 W is a hydrogen atom, a halogen atom, a C₁-C₄ alkyl group, a C₁-C₄ haloalkyl group, a C₁-C₄ alkoxy group, a C₂-C₆ alkoxyalkyl group, a C₂-C₆ alkoxycarbonyl group, a C₁-C₃ haloalkoxy group, a nitro group, a cyano group or -S(O)_n-R⁶ (wherein n and R⁶ are as defined above).



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EUROPEAN SEARCH REPORT

Application Number

EP 89 11 2691

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	FR-A-2 277 826 (SANDOZ S.A.) ---		C 07 D 231/22 A 01 N 43/56
A	US-A-4 643 757 (MASATOSHI BABA et al.) ---		C 07 D 405/12 C 07 D 409/12
P, A	EP-A-0 282 944 (NISSAN CHEMICAL IND. LTD)) -----		C 07 F 9/650 C 07 F 9/12 A 01 N 57/08 C 07 C 317/46 C 07 C 205/37 C 07 C 205/59 C 07 C 63/68
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18-10-1989	Examiner DE BUYSER I.A.F.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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